Organization, Market Structure, and Modus Operandi of the Private Silk Industry in Tenth-Century Byzantium

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Introduction

The private silk industry played an important role in the Byzantine economy. Yet, our understanding of the way it actually worked within the prevailing economic and institutional milieu of the tenth century is deficient. The scope of guild activity in the industry remains controversial since the enforceability of a mandated division of labor has been questioned. Nor has the impact of key institutional and operational parameters on the conduct and performance of the individual firms operating under the guild umbrella been fully understood, as past analyses have viewed the guild either as an organization protective of the interests of a group of businessmen operating under a licensed monopoly and acting in a monolithic fashion, or as an aggregation of aggrieved, downtrodden craftsmen. More important, the structure of the segmented by fiat markets, the nature of market competition, and their effect on the decision-making processes of individual firms have hardly been explored.

In addressing these issues, this study challenges long-standing theories, identifies misconstructions and unsupported assertions, fills in lacunae, and puts forward new hypotheses about the likely manner in which the silk industry operated within its economic, political, and cultural constraints. Emphasis on disaggregation and the operational dimensions of probative value offers new perspectives for deciphering the rationale for institution of the guild system, the behavior of the players involved—guild members and enforcement organs alike—and the economic activities of the industry. Further, this approach filters our current knowledge on the subjects under scrutiny, providing more cogent answers to an array of collateral questions that have puzzled historians over the years.

Having put the organizational setup in proper perspective, we can then analyze the structure and modus operandi of the silk industry's functionally segmented markets, which were conditioned by the dictate of the mandated guild organizational framework and institutional arrangements. By establishing the structural characteristics of each market in the productive circuit, by delineating the operational functions of the guilds concerned, by ascertaining the impact of the restrictions imposed by the regulatory re-

gime, and by tracing input-output flows and market exchanges, a deeper understanding can be gained about the nature of the competitive process, the extent of state intervention, the calculus underlying business conduct, and critical aspects of enterprise performance.

The nature of seller-buyer interaction, including the dynamics of the inter-seller and inter-buyer relations, are focal points of this inquiry since they affect the functioning of markets along the spectrum of the industry's activities, which encompasses the stages of sourcing, manufacturing, and distribution. Market structure, as shaped by the degree of seller and buyer concentration, the degree of product differentiation, and the conditions for the entry of new participants, determines the potency of operative market forces, defines the nature of competition, and affects the behavior of firms. Market conduct, referring to the set of principles, strategies, and methods that businesses employ in deciding production policies and pricing, influences in turn the firms' market performance, as reflected, inter alia, in the mix (design, quality, or variety) of products marketed, enterprise and output growth, and profit margins.

During the period under review, Constantinople was the predominant locus of silk manufacturing and marketing in the empire. Sericulture and the trade in cocoons, raw silk, yarn, and silk fabrics were in private hands. In the public domain, silks were produced in the imperial workshops (βασιλικὰ ἐργοδόσια)[1] but this output was strictly non-tradable.[2] The bulk of marketable silks was manufactured in private workshops located in the capital, which were organized into guilds (συστήματα) under close state surveillance.[3] Outside the guild system, non-commercial home production for personal use was confined to the nobility and the wealthy. The *Book of the Eparch* set forth the rules of conduct for the private silk industry in the capital, as well as for guild members, dignitaries, and the well-to-do.[4]

[1]The notion of imperial silk guilds has been challenged: S. Vryonis, Jr., "Byzantine Δημοκρατία and the Guilds in the Eleventh Century," *DOP* 17 (1963): 300 n. 46. Vryonis has pointed out that R. S. Lopez mistakenly identified the δημόσια σώματα (public guilds) as imperial guilds: "Silk Industry in the Byzantine Empire," *Speculum* 20 (1945): 3–8. What are referred to in the *Basilics* (LIV) as public guilds are actually private guilds. Imperial workshops are referred to in the sources as βασιλικὰ ἐργοδόσια.

[2]Silks of exquisite quality produced in the imperial workshops satisfied primarily the needs of the court. They were also offered by the emperor as presents to high-ranking government officials, favorite friends at home and abroad, foreign dignitaries, churches and monasteries and, on occasion, as tribute to hostile foreign leaders.

[3]In the capital, the private silk industry was organized under five trade and manufacturing guilds: *metaxopratai* (dealers in cocoons, raw silk, and yarn), *katartarioi* (yarn producers), *serikarioi* (manufacturers of silks), *vestiopratai* (merchants of domestically produced silks), and *prandiopratai* (merchants of imported silks).

[4]The *Book of the Eparch* (Ἐπαρχικὸν Βιβλίον), probably promulgated in 911 or 912, codified earlier decrees. On the various views regarding the compilation, interpolations, subsequent additions, and the date of issue of this compilation, see A. P. Christophilopoulos, Τὸ Ἐπαρχικὸν Βιβλίον Λέοντος τοῦ Σοφοῦ καὶ αἱ Συντεχνίαι ἐν Βυζαντίῳ (Athens, 1935), 7, 10–27; G. Ostrogorsky, *History of the Byzantine State* (Oxford, 1968), 215–16. The Greek text was published with emendations by J. Nicole, *Le Livre du Préfet ou l'Édit de l'Empereur Léon le Sage sur les corporations de Constantinople* (Geneva, 1893), and was reprinted in J. and P. Zepos, *Jus Graecoromanum* (Athens, 1931), 2:371–92. J. Nicole's 1894 French translation was reprinted in Τὸ Ἐπαρχικὸν Βιβλίον: *The Book of the Prefect. Le Livre du Préfet* (London, 1970), 120–203. English translations are by A. E. R. Boak, "The Book of the Prefect," *Journal of Economic and Business History* 1 (1929): 597–619; and E. H. Freshfield, *Roman Law in the Later Roman Empire: Byzantine Guilds Professional and Commercial* (Cambridge, 1938). Reference to the Greek text is absolutely necessary as neither translation has always captured nuances and subtleties. A recent critical edition of the Greek text and German translation is by J. Koder, *Das Eparchenbuch Leons des Weisen* (Vienna, 1991).

Organizational Setup: Facts and Fallacies

Sericulture and Local Cocoon/Raw Silk Trade

Commercial sericulture, which entailed raising the silkworm and producing the cocoon, was primarily pursued within the frontiers of the empire as a household industry in villages and rural towns. The organization and location of production was determined by the availability of feed, space, and seasonal labor.[5] The basic production unit was the family. For the most part, sericulture was a seasonal (April–July) sideline activity, usually employing family members, and provided supplemental income to the producer. Those in possession of mulberry groves[6] and space but lacking labor hired seasonal workers or met their needs through sharecropping arrangements.

Within the boundaries of the empire the trade in cocoons and raw silk had a distinct element of seasonality dictated by the production cycle.[7] Since the capital was the manufacturing center par excellence, stifled cocoons[8] or reeled silk[9] had to be transported there by land or sea and marketed through the intermediation of provincial wholesale merchants. Producers sold their fresh cocoons to traders in nearby towns,[10] many of whom maintained facilities for stifling and, possibly, unraveling and reeling. Most small producers probably did not stifle their own cocoons, as small volume and processing risks rendered this task uneconomical.[11] Besides, the expected gain could be easily lost, if the

[5] The cultivation of the silkworm from the egg through the spun cocoon requires extreme care, involving scrupulous cleanliness, control of temperature, humidity, and noise, and constant watch for infectious diseases, rendering sericulture a highly labor-intensive activity.

[6] Silkworms (*Bombyx mori*), fed leaves of the mulberry tree, yield high-quality commercial silk. Several species of wild silkworms, found in China, India, and elsewhere, produce marketable silk but not of such fine quality. Moriculture requires particular soil conditions and a moderate climate. This suggests that cultivation of mulberry trees was most likely confined to the littoral provinces of the empire and the immediate hinterland. On the controversy over the territorial location of sericulture in the empire, see N. Oikonomides, "Silk Trade and Production in Byzantium from the Sixth to the Ninth Century: The Seals of the Kommerkiarioi," *DOP* 40 (1986): 42–45; D. Jacoby, "Silk in Western Byzantium before the Fourth Crusade," *BZ* 84/85 (1991/92): 453–54 and references in nn. 6 and 7; A. Muthesius, "The Byzantine Silk Industry: Lopez and Beyond," *Journal of Medieval History* 19 (1993): 26–28; eadem, "Constantinople and Its Hinterland: Issues of Raw Silk Supply," in *Studies in Byzantine and Islamic Silk Weaving* (London, 1995), 315–35.

[7] In Europe and Asia Minor, where seasons are defined, the silkworm produces one harvest a year. This implies that there could not have been local production of multiple crops of silkworms, as Muthesius has hypothesized: "Byzantine Silk Industry," 33. In parts of India and China reproduction is continuous, but the quality of the silk produced is inferior and inversely related to the number of hatchings.

[8] Within ten to twelve days after the cocoon is spun, the chrysalis inside the cocoon must be destroyed to prevent it from damaging the threads. The most practical and economical method to achieve this was by heating the cocoons in ovens—a process called stifling. However, stifling often failed to kill the chrysalis since temperature could not always be fully controlled. This damaged the filament, affected the elasticity and color of the silk, and reduced the marketability and price of the cocoons.

[9] Reeling is the process whereby the filament is unraveled from the cocoon, the strands from several cocoons are brought together to form a continuous, uniform, and rounded thread, and the fiber thus obtained is wound on reels. Reeled silk is referred to as raw silk. Three-quarters of a cocoon can be reeled; the remainder is surface floss and husk. To facilitate the unraveling and reeling, cocoons were boiled in water to soften the cericin, the natural gum that surrounds the silk fiber. Cericin acts as an adhesive, aiding in holding the several filaments together while they are combined to form a single thread. At this stage, only 1% out of the 20% cericin content is removed. The gum is retained until the yarn or fabric stage, because it affords protection during further processing of the delicate filament.

[10] Itinerant merchants may also have been involved in the collection of cocoons from small producers at harvest time, reselling in turn to wholesale town merchants.

[11] Large producers probably stifled, reeled, and even marketed their own cocoons.

buying merchant was uncertain as to how carefully the stifling process had been performed.

Stifling obviated the need for immediate reeling, allowing time for storage and transport. However, since only one-sixth of a cocoon's weight is silk, shipping reeled silk over long distances was cheaper.[12] Traders therefore had to compare the potential savings in transport, given the distance from the origin of their shipment to the capital and their access to the cheapest mode of transport available,[13] with the costs and risks of reeling.[14] To be sure, limited utilization of reeling facilities (sheds and equipment) due to the seasonality of cocoon production could reduce perceptibly the return on investment. On the other hand, reeling could enhance profitability by making it possible to obtain higher selling prices in the capital, since storability enabled traders to time shipments to avoid periods of import peaks and depressed prices. Thus, distance, mode of transport, capacity utilization, carrying charges, and price expectations significantly affected the economic calculus and ultimately dictated the form in which the silk would be shipped. And, since shipment distances varied and production, initial processing, and transport conditions differed considerably among provinces and shippers, it is reasonable to assume that silk was shipped in both forms, depending on particular circumstances.

Mickwitz maintains that raw silk was brought into the capital in the form of cocoons.[15] Goitein and Jacoby also present convincing evidence that shipments of stifled cocoons in the Mediterranean basin were common, at times reaching distant points (e.g., exports from Spain to Egypt).[16] Simon, on the other hand, questions the existence of a cocoon trade in the empire on the grounds that, because unraveling has always been closely linked with sericulture, trade must have been conducted in the form of reeled silk.[17] In the same vein, Muthesius asserts that the cocoon trade was confined to the vicinity of production centers since cocoons had to be reeled within a matter of days to prevent spoilage.[18] The fact that stifling made possible the storage and safe transport of cocoons,

[12] Although bulky, as a high-value raw material and in demand, the stifled cocoons fetched a market price that could absorb relatively high transport costs. Even so, deadweight could become a factor with distance, tending to restrict shipments of stifled cocoons to rather short distances. Nevertheless, lower freights as a result of intense competition, e.g., along heavily trafficked sea routes, and shipment of the cocoons as return cargo could extend the traveling distance and mitigate considerably the adverse impact of the cocoons' deadweight.

[13] Sea transport had a clear cost advantage over land transport. See M. F. Hendy, *Studies in the Byzantine Monetary Economy, c. 300–1450* (Cambridge, 1985), 554–61.

[14] The reeling process is extremely delicate. It requires inordinate skill not only to prevent defects in the filament but also to blend the filaments into a strand of uniform thickness. For details on moriculture, silkworm rearing, cocoon production and initial processing, apart from the standard reference works, see A. Muthesius, "From Seed to Samite: Aspects of Byzantine Silk Production," in *Studies in Silk* (as above, note 6), 119–26; eadem, "Byzantine Silk Industry," 16–18, 32–33.

[15] "Die Organisationsformen zweier byzantinischer Gewerbe im X. Jahrhundert," *BZ* 36 (1936): 71 and n. 3.

[16] S. D. Goitein, *A Mediterranean Society: The Jewish Communities of the Arab World as Portrayed in the Documents of the Cairo Geniza* (Berkeley, 1967), 1:102; Jacoby, "Silk in Western Byzantium," 484 n. 183; idem, "Silk Production in the Frankish Peloponnese: The Evidence of Fourteenth-Century Surveys and Reports," in *Travellers and Officials in the Peloponnese: Descriptions-Reports-Statistics*, ed. H. A. Kalligas (Monemvasia, 1994), 45–47, 53, 61.

[17] "Die byzantinischen Seidenzünfte," *BZ* 68 (1975): 25–26, 39.

[18] "Byzantine Silk Industry," 34, 39; eadem, "Crossing Traditional Boundaries: Grub to Glamour in Byzantine Silk Weaving," *BMGS* 15 (1991): 346–37; eadem, "Raw Silk Supply," 325.

historical evidence that trade in cocoons did occur (sometimes over fairly long distances), opportunities for obtaining competitive freights on major sea lanes, and the realization that, in the end, various economic factors determined the form in which the silk would be traded and shipped all suggest an active trade in cocoons. It was probably greater over shorter distances, although apparently the cocoon trade was also drawn to more distant ports when conditions were conducive.

Cocoon/Raw Silk Trade in the Capital

Trading Regulations. Silk reached the capital from within and outside the empire in the form of stifled cocoons or reeled silk. The *Book of the Eparch* mandated that it be stored in the warehouses of the *mitata* (VI.5), which served both as guest houses for foreign merchants and as the marketplace for the imported goods. Foreign (ἐθνικοί) and provincial (ἐξωτικοί) merchants were treated in the same manner as far as the disposal of their wares was concerned. The eparch's deputy (*legatarios*) apprised him of all the merchants who had entered the capital and of their origin, inspected the goods they brought, instructed them as to the manner in which sales were to be conducted (διοριζόμενος ὅπως ὀφείλουσι πιπράσκεσθαι), and set the time limit within which they had to dispose of their products. As a rule, no one was permitted to stay longer than three months. Non-compliants were subjected to severe corporal punishment and expelled from the city, and their goods were confiscated (XX.1, 2; V.5; X.2).

Suppliers negotiated with representatives of the guild of *metaxopratai* (dealers in cocoons/raw silk), the only persons officially authorized to purchase imported silk, although *katartarioi* (yarn producers) could join them under certain conditions (VI.1; VII.4, 5; VIII.8). As market day approached (ἐν καιρῷ ἀγορᾶς), the members of the guild of metaxopratai contributed according to their means to a fund for the statutorily mandated collective purchase of the imported silk, which was then allocated among them in proportion to their contributions (VI.8). Ad hoc contributions were required because the guild had no standing trading fund. The metaxopratai were forbidden to pre-empt the purchase of silk by traveling outside the capital (VI.12). Had they been allowed to do so, individual guild members operating outside the mandatory collective purchase system would have undercut the effectiveness of the officially enjoined quasi-monopsony.[19] Evidently, the collective purchase mandate reflected the authorities' strong belief that the exercise of monopsony power would substantially lower the price of this crucial input.[20] The fact that the large and competent external suppliers were at times few in number may have contributed to the decision to legislate concerted action that neutralized their

[19] If purchases in local markets by traveling metaxopratai were allowed to become normal practice, local merchants could band together and thereby increase their bargaining power and selling prices, particularly as they were few in each location. Hence, a purchasing scheme based on coercive funneling of all imported cocoons and raw silk in the capital and prevention of guild members from trading individually would allow the monopsony power of the metaxopratai to operate with full force. Cf. also G. Mickwitz, *Die Kartellfunktionen der Zünfte und ihre Bedeutung bei der Entstehung des Zunftwesens* (Helsingfors, 1936), 211, 212 and n. 2. In light of the above remarks, there is no foundation to S. Runciman's assertion that the metaxopratai were allowed to buy raw silk privately from itinerant importers: "Byzantine Trade and Industry," in *Cambridge Economic History of Europe* (Cambridge, 1987), 2:154–55.

[20] For an array of factors that could potentially attenuate the actual monopsony power of the collectively acting metaxopratai, see below, pp. 305–10.

bargaining power. The measure was also prompted by a concern to uphold fundamental principles of the guild organization, namely to ensure equal access to commercial opportunities for all members and prevent the monopolization of imports by entrenched members who might otherwise buy up the silk before other guild members had a chance to make purchases ("forestalling"). Finally, the localization of transactions, development of specialized traders, and prohibition of business on non-market days increased market efficiency by reducing the effective costs for both buyers and sellers of searching for information.[21]

As the wholesale nature of the import trade required substantial amounts of ready cash, some metaxopratai may have borrowed to supplement their own resources or formed partnerships with wealthy individuals when their credit limits were exhausted. Metaxopratai unable to buy wholesale could get supplies in smaller lots from entrenched (ἐν εὐπορίᾳ) importer colleagues whose profit could not exceed 8 1/3 percent of the import price (VI.9). Rather than being a reflection of poverty of the metaxopratai, as has been alleged,[22] this provision actually points to variability in the size of firms within the guild, the absence of coordination among guild members in the resale market, and the state's subtle effort to foster inter-seller competition by enhancing the staying power of financially weaker members.

Katartarioi also could join the metaxopratai in these collective purchases, but only if they were invited by the latter and met certain preconditions, and if the quantity they intended to buy was commensurate with their processing capacity (VII.1, 4, 5).[23] The price that the participating katartarioi paid was fixed in advance by mutual agreement and could not be changed subsequently (VII.4).[24] Apparently, such invitations were extended only exceptionally, for example during import peaks or to meet shortfalls in contributions by metaxopratai, instances when additional capital was urgently needed to ensure the purchase of the entire quantity of silk that had entered the market and prevent diversion of cargoes to rival manufacturing centers.[25] The occasional inclusion of katartarioi not only increased the available capital but also forestalled competitive bid-

[21] G. J. Stigler, "The Economics of Information," *Journal of Political Economy* 69 (1961): 213 and 216. The concentration of a large number of buyers and sellers in one location significantly reduces information costs since prices in an organized market embody the requisite information for decision making. See also F. A. Hayek, *Individualism and Economic Order* (Chicago, 1948), 33–56 and 77–91.

[22] Metaxopratai in this position have been invariably considered as literally "poorer" (πενέστεροι): Lopez, "Silk Industry," 16. However, the notion of poor (πένης, πτωχός, ἄπορος) needs to be put in proper perspective. Byzantine law (*Basilics,* LX.34.10) considered as poor those whose assets were valued at less than fifty nomismata—no mean sum in the tenth century. Apparently, the metaxopratai referred to in provision VI.9 were smaller, less liquid traders unable to buy wholesale but certainly not impoverished. In the context of provision VI.9 (and VII.2 as well), one ounce is equivalent to one-twelfth of the nomisma, i.e., one miliaresion. The Byzantine currency and its equivalent higher denominated subdivisions were: 1 nomisma = 12 miliaresia = 24 keratia = 288 folleis. A charge of one miliaresion per nomisma amounted to 8 1/3%.

[23] The katartarioi had to convince the eparch that they were freemen, in good standing, and had the requisite financial resources (μὴ εἶναι παντελῶς ἄποροι) for the upcoming purchase (VII.5).

[24] This suggests that the participating katartarioi were charged more than the import price but less than that charged to non-participating katartarioi of servile status (see below, pp. 276–78), which included a profit of 8 1/3% (VII.2). Since the final import price was not known with certainty beforehand, the purchase price most likely was fixed by adding a certain percentage on the realized import price.

[25] See note 167. Since the katartarioi were approached by the metaxopratai and were invited to join in the collective purchase, it is unlikely that they were pressured to pay a high price differential.

ding between the two groups, which could only have benefited the suppliers. The fact that the *serikarioi* (silk manufacturers) were also forbidden to make direct purchases of raw silk from external suppliers (VIII.8) was further meant to prevent competition with the metaxopratai and preserve the latter's purchase monopsony.

The metaxopratai were not allowed to act as agents for the purchase of raw silk on behalf of influential and wealthy persons (VI.10). Nor could they sell raw silk to Jews or traders for resale outside the capital (VI.16) or market unprocessed silk from their homes; they were forced to sell openly in the marketplace (VI.1, 13). These restrictions were reinforced by similar provisions that applied to katartarioi. The latter also were forbidden to buy raw silk as surrogates for wealthy persons (VII.1), purchase more than they could process (VII.1, 5), or sell it unprocessed (VII.1). The main purpose of these restraints was to forestall the growth of commercial silk manufacturing outside the guild system by channeling all activity through legitimate conduits and curbing unseemly practices. By funneling all commercial transactions through a controllable environment, the strict division of labor among guilds could be enforced, while the emergence of monopolistic market structures, concentration of economic power, and potential defiance of imperial authority could be thwarted.[26] It would be simplistic to suggest that a mandatory guild system was instituted only to allow parallel development of commercial silk activities outside the purview and control of the authorities, whether by noblemen, enterprising wealthy individuals, or small-scale traders and craftsmen. It would serve no purpose to establish an organizational structure, designate operational functions at each stage of the production process, and enact elaborate regulations concerning admission, obligations, and conduct, only to let silk activities be conducted outside the guild system. Had this happened, the guild system would have effectively been scuttled. In addition, the imposed constraints aimed at deterring diversion of supplies to low-priority uses through sales to unauthorized persons or in minuscule quantities, thereby assuring high-priority (guild-organized) producers adequate inputs (VI.10, 13, 16; VII.1, 5). Finally, the stipulation that raw silk could not be sold to traders who intended to export it unprocessed (VI.16) reflects a primary concern to avoid unwarranted shortages of a vital raw material and consequent price increases that could disrupt production and undermine the critical statutory function of the metaxopratai as a reliable source of supply. It also points to a conscious policy of exporting from the capital only finished products, a policy that generated local employment and a much higher added value.

The fact that katartarioi were forbidden to acquire marketable surpluses, act as proxies for wealthy individuals, or sell unprocessed silk undoubtedly safeguarded not only the mandated import raw silk monopsony but also the metaxopratai's sales monopoly in the domestic market. However, the existence of a statutory guild sales monopoly does not lead ipso facto to monopolistic pricing behavior by individual guild members and

[26]The power of the guilds in the capital, always a challenge to the emperor's authority, was suppressed by the Macedonian dynasty during the 10th century. Thus, keeping in check potentially antagonistic economic and political activities by the numerous prospering traders and manufacturers who were part of the middle class (μέσοι) was a major concern of the authorities. In fact, the influence of the business community and the public at large reemerged in the 11th century, and their involvement in political decisions increased thereafter. Cf. P. Charanis, "On the Social Structure and Economic Organization of the Byzantine Empire in the Thirteenth Century and Later," *BSl* 12 (1951): 147–49; Vryonis, "Byzantine Δημοκρατία," 289–314; Hendy, *Studies*, 571–80, 590.

the elimination of intra-guild competition, as has been argued.[27] A sharp distinction should be made between the exclusive right to sell raw silk of the guild of metaxopratai as a group and the ability of individual guild members to take advantage of this prerogative and actually wield monopoly pricing power in the marketplace. As long as the metaxopratai were free to set their own prices, intra-guild competition could not be thwarted. Furthermore, effective exercise of monopoly pricing requires the existence of highly concentrated market structures, collusive action by guild members with the ability to set prices and enforce price discipline on the membership, closed entry to membership, and a supportive or quiescent regulatory regime. These conditions did not exist. The market structure was characterized by a large number of firms, a wide range of enterprise sizes, and unimpeded entry of new firms—conditions that fostered a competitive attitude and potent inter-seller rivalry among guild members. Express or tacit agreements leading to monopolistic arrangements were illegal and largely unenforceable, while actions that threatened to drive the katartarioi out of the market would most certainly invite their forceful reaction and state intervention.[28] In short, securing a purchase monopsony did not by itself guarantee monopoly pricing power in a market structure characterized by low or negligible concentration and without opportunity for concerted action.[29] Current thinking suffers from a "fallacy of division," since what is true collectively for the entire guild membership as a class is not necessarily true for each member of the class.

The metaxopratai sold the imported silk to katartarioi, but some metaxopratai entered into *à façon* arrangements with katartarioi to produce yarn to order on their behalf.[30] They also supplied at capped profit margins their less liquid fellow guild members (VI.9), as well as *metaxarioi* and katartarioi who, because of their servile status, were ineligible to participate in the collective purchase of the imported silk (VII.2).[31] The yarn the metaxopratai procured from the katartarioi was sold to the serikarioi, who were required to buy yarn only from metaxopratai (VIII.8).[32] The guild of metaxopratai therefore retained statutory monopoly in the yarn resale trade as well, although this prerogative did not assure them as individuals control over selling prices.[33]

[27] Mickwitz, *Kartellfunktionen,* 217; idem, "Organisationsformen," 73; Lopez, "Silk Industry," 18; N. Oikonomidès, "Entrepreneurs," in *The Byzantines,* ed. G. Cavallo (Chicago, 1997), 156; M. Angold, *The Byzantine Empire, 1025–1204* (London, 1997), 93; Simon, "Seidenzünfte," 24, 41–42, 44. Simon pointedly refers to the purchase *and* sales monopoly ("Einkaufs und Preismonopol") of the metaxopratai, ibid., 42.

[28] See note 190.

[29] The nature of competition in the domestic cocoon/raw silk market and the derivative ability of the metaxopratai to exercise monopoly pricing power in the resale yarn market is discussed below, pp. 310–19. By the same token, the reason the metaxopratai were not allowed to process the imported silk was to maintain the statutory "monopoly" of the katartarioi in yarn production and avoid sales competition between the two groups in the yarn market. Mickwitz argues that a strict division of labor between guilds was mutually advantageous because it prevented the development of a hybrid craftsman-trader class: "Organisationsformen," 73–74. Nevertheless, the fact that yarn production was the prerogative of the guild of katartarioi did not mean that individual katartarioi could exercise monopoly power in the sale of yarn, for the same reasons that individual metaxopratai had no such power. See below, pp. 316–17.

[30] Yarn procurement by metaxopratai through à façon contracts is examined below, pp. 274–76.

[31] The prevailing view that a segment of metaxarioi and katartarioi were assisted because they were poor and not members of their respective guilds is refuted below, pp. 276–81.

[32] The mainstream belief that the metaxopratai were the exclusive suppliers of yarn to serikarioi has not remained unchallenged. The controversy is critically reviewed and the challenge rebutted below, pp. 284–89. For an explanatory hypothesis regarding the circuitous yarn distribution pattern see below, pp. 290–91.

[33] See below, pp. 317–19.

Although they were allowed to manufacture silks for their personal use, it has been suggested that the nobility and wealthy in the capital were forbidden to import or buy raw silk in the market, even through the intermediation of guild members; instead, it is argued they had to rely on their own home-grown production.[34] However, it would have been very difficult, if not impracticable, for most members of the upper class residing in the capital to produce the raw silk they needed.[35] Moreover, the notion that every person of means was eager to embark on home production of silks is unrealistic. Organizing and running such an involved undertaking took significant effort. Besides, restrictions on the kind, variety, and quality of the silks that could be produced (VIII.2), and unlimited access to a great variety of high-quality domestically produced and imported goods detracted much from the fascination with homemade silks. The fact that noblemen, high-ranking officials, and wealthy persons were preferentially allowed to join the *prandiopratai* in the purchase of imported silks (V.4) suggests not only that their quality was on a par with those produced locally but that home production in the capital was nominal. Also, home production would not have enabled the upper class to manufacture otherwise forbidden silks, as has been asserted.[36] Finally, if influential persons were allowed to manufacture silks for non-commercial purposes (VIII.2), it would have made no sense to forbid them to buy raw silk or yarn retail to satisfy household needs. In fact, the *Book of the Eparch* did not restrict such direct purchases by final consumers for their own needs.[37]

Forward Integration into Yarn Production—A Specious Theory. The metaxopratai were not allowed to be involved in the processing of the imported silk (VI.1, 14). However, according to Mickwitz, they *were* involved, hiring workers to perform the task. These

[34] Lopez, "Silk Industry," 15–16; Mickwitz, "Un Problème d'influence: Byzance et l'économie de l'Occident médiéval," *Annales d'Histoire économique et sociale* 7 (1936): 27.

[35] A. Harvey maintains that it must have been difficult for the authorities to enforce regulations aiming to curtail private production of expensive silks by the powerful and the wealthy since they could produce raw silk on their estates: *Economic Expansion in the Byzantine Empire, 900–1200* (Cambridge, 1989), 183–84. However, estate production of raw silk in the immediate vicinity of the capital could not have been extensive—hence the restrictions on their access to imports. Only in the provinces of the empire where the provisions of the *Book of the Eparch* were not applicable could the magnates produce silks based on home-grown inputs, and then only if they were located in the right climatic zone.

[36] Lopez maintains that the emperor could not prevent noblemen from manufacturing prohibited silks (κεκωλυμένα) in their own workshops any more than he could impede the growth of the large estates: "Silk Industry," 16. The analogy is strained, and the implicit assumption that the authorities tolerated such infractions is unfounded. Flaunting forbidden silks in the capital would be an affront to the emperor and a challenge to his authority because of their symbolism, strictly hierarchical order of display, and exclusive use by the imperial court and those on whom the emperor bestowed the privilege. It is therefore very unlikely that irreverent and defiant transgressors would get away with impunity. Besides, Lopez belittles the deterrent effect of the severe penalties inflicted on lawbreakers; see *Basilics,* XIX.1.30; *Book of the Eparch,* VIII.2, 4. On the other hand, potential infractions by regional noblemen who opposed the emperor and wanted to challenge his authority should be viewed as isolated incidents, at best. These alleged violations contrast sharply with the widespread and subtler legal maneuverings and machinations by means of which the powerful in the provinces could appropriate the land of defenseless smallholders because their exercise of power remained unchecked and was reinforced by the state's confiscatory tax policy. On these issues see the references in note 225.

[37] Mickwitz, *Kartellfunktionen,* 200. Simon also thinks that there was no ban on the purchase of raw silk or yarn by influential or wealthy people, provided that such transactions were aboveboard, and, in fact, he extends this possibility to all private consumers: "Seidenzünfte," 40–46 and esp. 41–42. Muthesius believes that the metaxopratai were allowed to sell raw silk to the wealthy for their limited private use and—mistakenly—to traders and craftsmen who were not guild members: "Byzantine Silk Industry," 34 and 39.

workers were poor katartarioi, drawn from an abundant reservoir in their guild, who produced yarn for metaxopratai in their sheds for piece-rate wages (Stücklohn).[38] Mickwitz's hypothesis, derived basically from the experience of medieval Italian cities, is untenable on several grounds. In the first place, even if the work was performed in the hired workers' sheds, as long as the katartarioi were employees of the metaxopratai, a controlling principal-agent (i.e., employer-laborer) relationship existed, constituting a direct and illegal involvement of the metaxopratai in silk processing. Second, in Byzantium wage-earning craftsmen were not admitted to the guild; membership was restricted to independent operators exclusively.[39] Third, these hired workers (μισθωτοί) are nowhere identified as katartarioi in the *Book of the Eparch,* which suggests that they were not guild members.[40] This inference is reinforced by the fact that the notion of μισθωτός implies compensation of highly skilled operatives or employees occupying responsible positions in the form of fixed payments at regular intervals, whereas piece rates are linked to ordinary workers' output. Finally, if these workers were in such an abundance, there was no point in dealing with them in the *Book of the Eparch,* let alone imposing restrictions on contract lengths and salary advances, or prohibiting "poaching" of other members' workers (VI.2, 3).[41]

In the same vein, Lopez has maintained that, although the metaxopratai were theoretically forbidden to take over silk processing, in practice the prohibition was rendered moot by the fact that the metaxopratai could hire workers or use their slaves to engage in yarn production. To this end, they could draw on a pool of "ill-favored" katartarioi, who preferred to give up their independence and work for the metaxopratai as employees. In Lopez's view, it is hardly credible that workers were employed to assist the metaxopratai in buying and selling. And although the law forbade the metaxopratai to enter into a contract with a hired worker for longer than one month, it did not prohibit them from renewing the contract or hiring more than one worker. Alternatively, the metaxopratai could set up their slaves in the business of yarn production as proxies.[42]

Lopez's assertion, too, is conjectural, and the arguments advanced in refuting Mickwitz's theory apply with equal force. In addition, by setting up his slaves in yarn production, the metaxoprates did not sever the master-slave bond; he was liable for the slaves' commercial debts or wrong-doing (VI.7). More important, the conduct of silk processing activities by a slave on behalf of his master clearly implied an on-going employer-worker relationship and the slave's proxy status. On both counts the law was violated. It is inconceivable that the *Book of the Eparch* created, inadvertently or deliberately, such a huge loophole undermining the division of labor among guilds—the cornerstone of the

[38] "Organisationsformen," 72–73; "Un Problème," 25–26. Nicole committed the initial error by characterizing the katartarioi as poor ("pauperiores confectorum"): *Livre du Préfet,* 34, and "peu fortunés," Ἐπαρχικὸν Βιβλίον 160, misinterpreting the term εὐτελεῖς, which refers to their servile social status and not to their financial situation. Translators (see note 4) and historians have adopted the incorrect rendition. On this important issue see below, pp. 276–78, 310–17.

[39] See below, p. 280 and note 66.

[40] B. Mendl, "Les Corporations byzantines," *BSl* 22 (1961): 308–9 n. 17 (M. Loos); Simon, "Seidenzünfte," 29 and n. 30, with references to concurring views of M. Sjuzjumov and A. Kazhdan in their respective works cited therein.

[41] See below, pp. 275–76, 293.

[42] Lopez, "Silk Industry," 18, 19 and n. 1.

guild's organizational structure. Were this the case, the de jure prohibition of vertical and horizontal integration within the guild system would have been defeated. Finally, it is not credible that the metaxopratai would openly hire workers or employ their slaves in workshops owned and run by them or their surrogates in defiance of the law, which imposed stiff and humiliating penalties (flogging, tonsure of the hair, and exile: VI.1, 14). If they ventured into silk processing, the metaxopratai must have been in a position to circumvent the law unscathed, either because they could remain undetected or could rely on venal public officials to cover up infractions or quash indictments. Yet, there is no evidence to suggest that individual metaxopratai had the power or political clout necessary to influence authorities and remain above the law during the period under review.

The provisions of the *Book of the Eparch* undoubtedly allude to the potential for firms to infringe upon other guilds' activities, something that can be expected in a free-market economy, but the law's precautionary provisions cannot be construed as proof of a prevalent pattern by aggressive firms. More importantly, the very purpose of the legislative reform introduced by the *Book of the Eparch* was precisely to frustrate such transgressions, ushering in a "new order" that reflected a selectively interventionist industrial policy aimed at advancing the interests of the state and curbing the market power of guild members. Doubters have yet to show that the state failed in this effort.[43] Thus, Lopez supplies no evidence to substantiate his claim that the guilds of metaxopratai, serikarioi, and prandiopratai encroached upon the other two guilds after the promulgation of the *Book of the Eparch.* He simply conjectures that these pressures persisted, dismisses offhand the willingness and ability of the authorities to enforce the law, underestimates the deterrent effect of the severe punishment of transgressors, and slights the capacity of the offended guilds to fend off infringement of their prerogatives. Nor does Mickwitz, for that matter, go beyond avouching presumptively the expansionary tendencies of these groups and, implicitly, the administration's lack of will to enforce the law.

In particular, the doubters fail to appreciate that the source of power and the enforcement mechanism materially affect the spirit and the manner in which the law is administered. The locus of the coercive executive power in Byzantium was the emperor, who had absolute authority over his subjects. Rank, reputation, or wealth afforded no immunity against the imperial will. The emperor could imprison, banish, discharge from office, or demote any person who betrayed his trust, confiscate assets and personal property, and inflict corporal punishment. In short, the emperor embodied and personified the law. To implement the *Book of the Eparch,* the emperor employed professional civil servants—not officials who had purchased office expecting to extract a satisfactory return on their investment or self-serving guild members.[44] The assignment of the supervisory

[43]Cf. Mickwitz, "Organisationsformen," 75; idem, "Un Problème," 26–27; Lopez, "Silk Industry," 18–20; Mendl, "Les Corporations byzantines," 306; Runciman, "Byzantine Trade," 155; Simon, "Seidenzünfte," 32–33.

[44]A. Stöckle, *Spätrömische und byzantinische Zünfte* (Leipzig, 1911), 84; Christophilopoulos, Ἐπαρχικὸν Βιβλίον, 47–48, 49 and n. 1; Boak, "Book of the Prefect," 599; and Oikonomidès, "Entrepreneurs," 155, maintain that the chiefs of the guilds, though officials of the state, were chosen from among guild members. However, this is true only for the association (σύλλογος: I.2, 3, 4, 13) of the notaries who, because of their legal training (I.1, 2) and quasi-judicial functions, were considered an elite group and were subject to a different set of rules. The *Book of the Eparch* explicitly states how the selection of the chief is to be made: the

task to a disinterested, full-time, ad hoc body of officers loyal to the emperor and paid by the fiscus ensured their diligence and evenhandedness, all the more so since they carried out their duties in a highly localized market and amidst the ubiquitous presence of informers. The central authorities watched carefully the performance of the executive officers, and there was no doubt about the dire consequences of dereliction of duty. Citizens were encouraged to lodge complaints against those in authority before the imperial tribunal, and officials were obliged to remain in their posts for fifty days after the termination of their office to respond to citizens who might want to bring suits against them. In sum, lacking convincing evidence about on-going transgressions, a corrupt administrative apparatus, and suborned administrative justice during the era in which the *Book of the Eparch* was operative, it cannot be cogently inferred that the division of labor among guilds was not upheld or that the rules prohibiting vertical and horizontal expansion were not effectively enforced.[45]

A Façon Arrangements: A Sideline Activity. There was no compelling reason for the metaxopratai to resort to questionable practices in order to expand their commercial activities. They could lawfully supply cocoons or raw silk to katartarioi to be processed into yarn in their workshops under a charge for service arrangement—à façon. Absent any legal stipulation to the contrary, à façon transactions must have been legitimate commercial activities. What the *Book of the Eparch* explicitly forbade was the parallel conduct of silk processing activities by metaxopratai, through the hiring of laborers to perform the work in the metaxopratai's own or the workers' workshops. Under a verbal or written à façon contract, the metaxopratai provided raw silk to interested katartarioi, specified the tensile strength of the yarn to be produced, paid an agreed-upon price for the services rendered, and collected the final product on a set delivery date. Under this contractual arrangement, the participating katartarioi operated in their own workshops, employed their own equipment, tools, and auxiliary materials, and hired outside labor as needed. The compensation the katartarioi received was not a wage, but comprised the costs of processing the raw silk into yarn (wages, operating costs, overhead) plus profit. In other

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ranking notary is promoted to the vacant position by the eparch, provided all members vouch for him, a maximum of twenty-four due to the *numerus clausus* (I.23). If he is found unworthy of the position, the next in rank is advanced to the post, and so on (I.22). It is evident that this ad hoc procedure and internal organization was tailored to the distinct quasi-judicial function discharged by the notaries and certainly cannot be applied by analogy to the unrelated business activities of the other guilds. In dealing with the guilds proper (συστήματα), the *Book of the Eparch* nowhere indicates that the chiefs were guild members. This is understandable, as the authorities could not trust active guild members to perform their duties impartially because of their vested interest. If the assessor (σύμπονος: XIV.2; XVIII.1, 4; XIX.1), senior inspectors (ἐπισκεπτῆται and ἐπόπται), sealers (βουλλωταί: IV.4, VI.4, VIII.3, XI.9, XII.9, XIII.2, XVI.6, XIX.4), and examiners of silk fabrics (μιτωταί: VIII.3) were career public functionaries, apparently to ensure effective implementation of the rules and regulations, *a fortiori* the chiefs of the guilds had also to be outsiders (or at least guild members who had permanently given up their craft and were considered trustworthy), given the nature of their tasks, and their salaries must have been paid by the *fiscus*. Runciman, however, believes that the chiefs' salaries were charged to the guilds: "Byzantine Trade," 159. That such an arrangement would apply only to the chiefs seems very unlikely, as administrators in Byzantium were paid directly from the treasury. Cf. A. Kazhdan and G. Constable, *People and Power in Byzantium: An Introduction to Modern Byzantine Studies* (Washington, D.C., 1982), 151; A. Guillou, "Functionaries," in *The Byzantines,* ed. Cavallo (as in note 27), 217.

[45] See also the discussion below, pp. 284–89.

words, the contracted katartarioi operated as principals, not agents, that is, as independent craftsmen within the guild structure and not as subordinate μισθωτοί under a employer-worker framework. As this activity did not take place on the premises of the metaxopratai or in the workshops of the katartarioi under their or their proxies' management and control, there was no direct involvement of the metaxopratai in any facet of the yarn production and, in consequence, no transgression of the law. In this fashion, the functional division of labor was preserved intact.[46]

À façon arrangements were incidental sideline activities probably prompted by metaxopratai eager to ensure that commitments to their clients (serikarioi), particularly at times of peak yarn demand, would be fulfilled by securing the services of dependable katartarioi; or they were seen as an opportunity by more aggressive metaxopratai to procure yarn at a lower cost, enhance their competitiveness, and capture a larger share of the resale market. À façon deals may have been initiated by katartarioi as well. Those lacking access to working capital could operate on interest-free advances, while others might secure work when their own sales were off. The arrangement enabled katartarioi otherwise unable to compete by purchasing raw silk at the going or even capped market prices to stay in business. Some katartarioi, lacking a competitive spirit, may have given up their entrepreneurial function and confined themselves to the strictly technical aspects of their craft. Finally, à façon agreements enabled larger katartarioi to economize on working capital and utilize more fully their productive capacity and workforce.

To organize and supervise this sideline activity, metaxopratai with sizable ongoing operations needed the assistance of competent, experienced, and trustworthy operatives. Because of their qualifications, such operatives were in great demand and short supply.[47] Apparently, these individuals formed a pool of fairly independent and mobile workmen, who wielded some bargaining power, as suggested by the fact that they could command advance payment. They were the very persons the metaxopratai were eager to entice into service, *not* to be employed as common laborers, as has been alleged, but to execute this largely managerial function. That is why the *Book of the Eparch,* for the sake of fairness and equal opportunity, stipulated that such persons could not be hired for more than a month, although contracts evidently could be renewed, probably after they had been

[46]Although they have certain similarities, à façon business deals differ in important respects from the domestic or putting-out system. À façon agreements involved independent guild members (katartarioi) working in their own sheds, payment of a price for their services, and concentration only on cocoon/raw silk processing. The merchants (metaxopratai) did not control the whole process from start (raw silk) to finish (silks). By contrast, the putting-out system in the West aimed at bypassing the guild system and entailed control of the entire process by the merchant-employer putter-out. Under this system, the work was done by hired labor receiving mostly piece-rate wages at the craftsmen's homes or the putter-out's workshop, and mainly with tools, equipment, and auxiliary materials supplied by the latter. To the extent that work was put out to guilds, the master craftsmen themselves were employed as wage earners (*maîtres ouvriers*), hiring additional workers if they had to meet contractual obligations exceeding their personal capacity: H. Pirenne, *A History of Europe* (New York, 1958), 2:102; E. F. Heckscher, *Mercantilism* (London, 1955), 1:149–50, 187, 189; M. Weber, *General Economic History* (New York, 1961), 122; S. B. Clough and C. W. Cole, *Economic History of Europe* (New York, 1952), 183. Thus, the putting-out system was based on a dependent employer-worker relationship—on labor contracts—whereas à façon agreements represented commercial contracts between independent businessmen.

[47]Apparently, these operatives had hands-on practical experience in the various tasks of raw silk processing, including basic managerial skills. See also below, p. 293 and note 112. Conceivably, some were Jews or other foreigners; see note 66.

renegotiated. Nor could these workmen be hired away from another employer before they had rendered fully the services for which they had been paid (VI.2, 3).[48] Clearly, the so-called μισθωτοί were not ordinary workers involved in silk processing; rather, they possessed special skills and were retained by metaxopratai to implement demanding à façon contracts with independent katartarioi. The conjunction of legitimate à façon transactions with the existence of a body of operatives capable of managing this sui generis type of operation suggests that such activities did take place during the period under review, especially since they worked to the mutual advantage of metaxopratai and katartarioi, although their extent cannot be ascertained.

The Enigma of the Metaxarioi. The function, social status, and guild affiliation of the metaxarioi remain controversial because of diverse interpretations of the relevant passage of the *Book of the Eparch* (VII.2). According to one hypothesis, the terms metaxarioi and metaxopratai cannot be synonymous since the text makes a clear distinction between them. The metaxarioi were a special class of raw silk traders dealing in silk of inferior quality that they procured from the metaxopratai and, like the katartarioi, only by special permission of the eparch directly from external suppliers. Most likely, they formed a section of the guild of metaxopratai. This view mistakenly identifies the metaxarioi with the *melathrarioi*.[49] Mickwitz considered the metaxarioi to be small-scale entrepreneurs playing a modest role and eking out a living, a description that hardly helps in identifying the object of their activity.[50] Mendl, on the other hand, maintains that the metaxarioi could have been either traders in raw silk or raw silk processors since the text permits both interpretations.[51] But, as has been convincingly pointed out, if the metaxarioi were both traders and yarn producers, it would be difficult to explain the concurrent use of two terms (katartarioi and metaxarioi) in the same provision to convey the same notion.[52]

According to the prevailing view, metaxarioi and metaxopratai were interchangeable terms: the former being an earlier expression of the latter, as in the case of serikarioi (VIII.1–13) and serikopratai (IV.7). Metaxarioi and metaxopratai plied the same trade, being merchants in raw silk. The only difference between them, it is suggested, was that the metaxarioi were not enrolled in the guild of metaxopratai.[53] However, the assertion that the metaxarioi were not guild members is based on two fundamental misconstructions: 1) the misperception of them as indigent and thus unable to join the guild, following the erroneous translation of the term εὐτελής in reference to katartarioi as "poor" in provision VII.2 but applicable by analogy to metaxarioi as well, since both faced the same

[48]Certainly, the aim of these restrictions was not to preserve the small-scale character of the trade and manufacturing activities, as E. Frances argues: "L'État et les métiers à Byzance," *BSl* 23 (1962): 239–41.

[49]Christophilopoulos, Ἐπαρχικὸν Βιβλίον, 83–84, 85 and nn. 1 and 2. For a critique of this hypothesis see below, pp. 280–83.

[50]"Organisationsformen," 74.

[51]"Les Corporations byzantines," 312.

[52]See Loos's attribution to Sjuzjumov in Mendl, "Les Corporations byzantines," 315 n. 28.

[53]Nicole, *Livre du Préfet,* 80; Stöckle, *Byzantinische Zünfte,* 8 ff and n. 5; K. Gehring, "Das Zunftwesen Konstantinopels im 10. Jahrhunderte," *Jahrbücher f. Nationaloeconomie u. Statistik* 3.38 (1909): 580; E. Mayer, review of Stöckle, *Byzantinische Zünfte,* in *BZ* 21 (1912): 532; Boak, "Book of the Prefect," 608 n. 5; G. Zoras, *Le Corporazioni bizantine, Studio sull'* Ἐπαρχικὸν Βιβλίον *dell' Imperatore Leone VI* (Rome, 1931), 172; Lopez, "Silk Industry," 16 and n. 3; Runciman, "Byzantine Trade," 154 n. 12, 156; Simon, "Seidenzünfte," 36–39; Muthesius, "Byzantine Silk Industry," 32.

predicament and were treated alike;[54] and 2) reading of the passage οἱ μὴ ἐν τῇ ἀπογραφῇ ὄντες as indicating those metaxarioi who were not members of the guild of metaxopratai in provision VII.2. These misconstructions present a distorted picture of the social status of the metaxarioi (and of the katartarioi as well) and give rise to serious inconsistencies with other relevant provisions of the law. A faithful translation of the original text presented below offers a more cogent portrayal of their true social standing and preserves statutory consistency. Furthermore, although the mandatory enrollment only of workshop owners or operators in a guild for the practice of a trade or craft is not explicitly mentioned in the *Book of the Eparch,* the tenor of the statute leads to this conclusion.

Provision VII.2 stipulates:

> Οἱ εὐτελέστεροι καταρτάριοι καὶ ἀπὸ τῶν μεταξαρίων οἱ μὴ ἐν τῇ ἀπογραφῇ ὄντες, εἴτε ἄνδρες εἴτε γυναῖκες, μὴ δυνάμενοι ἐκ τῆς ἔξωθεν μετάξης ἐξωνεῖσθαι καὶ ἀπὸ τῶν μεταξοπρατῶν ἐξωνούμενοι, ὀφείλουσιν οὐγγίαν μόνην ἀπολείπεσθαι ἐν τῷ ἀπὸ τῆς ἐξωνήσεως τῶν μεταξοπρατῶν νομίσματι.

It should be rendered as follows:

> Katartarioi of a lower social status (εὐτελέστεροι) and those of the metaxarioi [=metaxopratai] not included in the eparch's list (οἱ μὴ ἐν τῇ ἀπογραφῇ ὄντες) because of their lowly social standing, whether men or women, being ineligible to buy raw silk directly from external suppliers and having to make purchases from metaxopratai, cannot be charged more than 8 1/3 percent over the import price.

The long-standing rendition of εὐτελεῖς as "poor" is thus clearly incorrect, while the reading of the passage "οἱ μὴ ἐν τῇ ἀπογραφῇ ὄντες" as "those operating outside the guild of metaxopratai" is infelicitous at best. The characterization of katartarioi (and metaxarioi) as εὐτελεῖς in provision VII.2 pertains to their inferior social standing as slaves (οἰκέται), not to their financial condition.[55] To mitigate the disadvantages suffered by this segment of katartarioi and metaxopratai, because they were denied the right to partake in joint purchases from external suppliers, they were allowed to procure their requirements wholesale or retail at capped profit margins.[56] The provision was not meant to allow the financially weak, the "poorer," as has been argued, to take advantage of this concession if they were freemen.

By the same token, rendition of the passage "καὶ ἀπὸ τῶν μεταξαρίων οἱ μὴ ἐν τῇ ἀπογραφῇ ὄντες" as "those metaxarioi not in the register of the guild" is arbitrary, lacks foundation, and leads to fundamental contradictions. The first inconsistency arises from

[54] Cf. Lopez, "Silk Industry," 16 and n. 3.

[55] A statutory provision that metes out penalties to felons convicted of preempting and hoarding goods in times of scarcity is quite probatory: if the culprits belong to the merchant class (πραγματευταί), i.e., are of higher social standing (=freemen), their merchandise (πραγματεία) is confiscated or they are exiled; if εἰ δέ εὐτελεῖς, i.e., if they are of inferior social standing (=slaves), they are sentenced to hard labor in public works. See *Basilics,* LX.22.6; *Hexabiblos,* VI.15.7. Cf. also *Basilics,* XIX.1.82, LX.39.1.3, LX.51.34; *Synopsis Basilicorum,* Φ.II.2. It is telling that provision VI.9 refers to the poorer (=less liquid) metaxopratai as πενεστέροις and *not* as εὐτελεστέροις. See also note 22.

[56] Christophilopoulos maintains that the metaxopratai provided raw silk wholesale to those katartarioi and metaxarioi who were not allowed to procure it directly from external suppliers: Ἐπαρχικὸν Βιβλίον, 62. Lopez, on the other hand, believes that they met their requirements by buying retail: "Silk Industry," 16. Probably, sales took place at both levels, depending on the scale of the buyers' operations, as liquidity was not necessarily a constraint.

the different interpretations of ἀπογραφή (list) in provisions VII.2 and VII.5. In provision VII.2, "οἱ μὴ ἐν τῇ ἀπογραφῇ ὄντες" has been applied to those metaxarioi who were not members of the guild of metaxopratai.[57] This interpretation, however, is inconsistent with the generally accepted rendition of provision VII.5, which stipulates that katartarioi willing to purchase imported raw silk, *inter alia,* had first to register with the eparch (ἀπογραφέσθωσαν πρότερον παρὰ τῷ ἐπάρχῳ), that is, they had to be included in the list of applicants drawn up by him. Evidently, there cannot be two conflicting interpretations regarding the meaning of ἀπογραφή in dealing with the same circumstance.

A second inconsistency derives from the misconstrued social status of the katartarioi and metaxarioi referred to in provision VII.2. Concerning the katartarioi, provision VII.3 stipulates that katartarioi can enroll in the guild of metaxopratai if they are freemen, while provision VII.5 enables katartarioi to join the metaxopratai in collective purchases of imported raw silk provided they are not of servile status (οἰκέται). However, provision VI.7 empowers metaxopratai to set up their slaves to carry on this trade in their place, whereas provision VI.8 stipulates that all members of the guild of metaxopratai (πᾶσα ἡ κοινότης τοῦ συστήματος) contribute to the fund for the common purchase of the raw silk. The conjunction of these provisions suggests that the slaves of the metaxopratai could participate in the collective purchase whereas katartarioi of servile status could not, either directly or by joining the guild of metaxopratai, even though they might meet other preconditions (e.g., integrity or financial means). Such a state of affairs, however, would have created two classes of slaves in the same industry subject to diametrically opposite treatment—an untenable situation.

With respect to metaxarioi, a more sensible and consistent interpretation of provision VII.2 would be, as already alluded to, that those "not in the register" actually refers to those of the metaxarioi (=metaxopratai) who are not freemen and, because of this encumbrance, are not eligible to participate directly in the collective purchase.[58] Put differently, slaves were not allowed to participate directly in the purchase of imported raw silk whether metaxarioi or katartarioi, even if they were persons of means. The fact that the metaxarioi are mentioned only once in the *Book of the Eparch,* and only in provision VII.2 in conjunction with the lowly katartarioi, cannot be mere chance. Rather, it reflects their inferior social standing among silk traders, a notion that goes back to earlier times (Codex Justinianus, VIII.13.27), and an attempt to draw a sharp distinction between freemen and slave metaxopratai in regard to this particular transaction.

Although provision VI.8 states that all guild members must contribute to the fund, the fact of the matter is that some metaxopratai (=metaxarioi) could not participate in the purchase because of their inferior social standing.[59] "All" therefore should be read as meaning *all those eligible,* that is, not of servile status. In short, the restriction affected both katartarioi and metaxarioi because they shared the same inferior social status (οἰκέ-

[57] See note 53.

[58] Simon points out that the precise character of the eparch's list cannot be determined. Nevertheless, he disputes the notion that the metaxarioi were not included in the list because they lacked financial resources: "Seidenzünfte," 36–38.

[59] It is very likely that even freemen metaxopratai did not always participate in the collective purchase, as frequency of arrivals, projected market demand, inventories on hand, liquidity position, and price expectations determined an individual buyer's requirements and procurement timetable. Any shortfalls in contributions would be made up by inviting katartarioi to join in (VII.4).

ται) and, in consequence, were subject to identical treatment. As a concession, these lowly groups met their requirements at a fixed mark-up.[60]

The third inconsistency emerges from the characterization of the metaxarioi as poor. If indeed the metaxarioi were poorer metaxopratai not enrolled in the guild, as Lopez maintains, they would have been classed together with the poorer metaxopratai referred to in provision VI.9, where they properly belonged, since the same preferential treatment was extended to both. The reason for dealing with them together with the katartarioi in provision VII.2 was their common low social standing as slaves. The metaxarioi are dealt with in section VII, not because they were poor or operated outside the guild of metaxopratai, as has been alleged, but because they suffered from the same predicament: as slaves they were ineligible for this specific transaction, albeit for reasons that remain elusive. Furthermore, it is unlikely that the same privilege would have been extended to both guild and non-guild members in the face of a policy objective that aimed to discourage the development of a silk industry outside the bounds of the guild system. In point of fact, their conjoint treatment supports the notion that there was no trade in raw silk outside the guild structure and, in consequence, no unorganized traders.

Based on his theory that the metaxarioi were metaxopratai who were not members of the guild, Stöckle surmises guild membership was not mandatory for silk merchants, a view that is shared by many others.[61] Lopez, in particular, maintains that there were two groups who did not belong to private guilds. They stood above and below the middle class of craftsmen. The first group included the nobility and the wealthy, while the second comprised the lowly melathrarioi and the poorer metaxarioi (=metaxopratai) and katartarioi. Espousing the contested view that the metaxarioi were poor and not members of the guild, and bolstered by the fact that the wholesale trade in raw silk required considerable financial resources, Lopez hypothesizes that guild members were a rising oligarchy within the middle class. Around them was a fringe of poorer traders and craftsmen who could not join or had dropped out of their respective guilds because they could not afford the entrance fee or underwrite their share in the collective purchase of imported raw silk. Even though they were not guild members, these impoverished groups were still protected by the law, being entitled to purchases at capped profit margins.[62]

This thesis is untenable. First, the *Book of the Eparch* nowhere makes class distinctions or suggests that these groups operated outside the guild system. The very fact that they are dealt with within the legal framework of the guild attests to their being part of the system. Second, as noted earlier, the katartarioi and metaxarioi referred to in provision VII.2 have been mistakenly perceived as poor; they were of servile status and for that

[60] Even if the number of ineligible metaxarioi and katartarioi was small, a problem could arise as to how the financial burden would be shared equitably by the other metaxopratai when the market price exceeded the capped price. The problem would be exacerbated if the price charged was well below the going market price. For, in this circumstance, buyers would have an incentive to increase their purchases at the capped price, especially since there was no question of affordability, whereas the sellers would be disinclined to be accommodating and forego legitimate profits. The same would be true whenever a large number of claimants was involved. Probably, the chiefs of the guild intervened, assessing requirements and devising ad hoc allocative mechanisms to ensure "fair" treatment. While the solutions may not have always satisfied all parties to the exchange, the fact remains that the matter could not have been left to the parties' discretion.

[61] *Byzantinische Zünfte,* 8. For concurring views see note 53.

[62] Lopez, "Silk Industry," 15–16.

reason ineligible to take part in the collective purchase. Third, the existence of metaxopratai unable to participate in the wholesale common purchase (VI.9) or of katartarioi able to join (VII.5) confirms only the varying size of firms in the respective guilds and the concomitant differences in financial strength of the membership—*not* the existence of unorganized, needy tradesmen and craftsmen operating outside the guild framework. Fourth, silk was an expensive commodity requiring substantial capital; wholesale deals probably reached double- and triple-digit figures in nomismata. Even retail sales exceeded single digits, judging from the prices of silks (IV.2, VIII.1). If indeed these businessmen had been so poor, they would have been unable to set up shop in the first place; nor can it be presumed that they were trading from their homes, as this was not allowed (VI.13). Hence, there was no question of traders or craftsmen being unable to afford the one-time, nominal entrance fee of two nomismata. It is possible, indeed understandable, that some guild members could not muster the funds to buy wholesale, at least not at all times, but this does not mean that they were indigent. The definition of poor in Byzantine law should always be kept in mind.[63] Inevitably, those who either failed, not an unusual circumstance in the business world, or lacked the financial resources to operate as independents had to seek employment as hired workers.[64] Finally, if the contested provision VII.2 is interpreted, as it should be, as pertaining to those not registered with the eparch, then the conclusion to be drawn is that, in those economic activities like the silk industry that were organized into guilds, membership was a precondition.[65] However, guild membership was mandatory only for the proprietor of a business establishment, not for the craftsman employed as a laborer, who was rather denied admission. This fine distinction has eluded historians.[66]

[63] See note 22.

[64] Simon questions the possible involvement of women in the silk trade because careers of women as salespersons were viewed as subordinate, and believes that provision VII.2 refers only to activities involving raw silk processing: "Seidenzünfte," n. 96. On the other hand, P. Koukoules maintains that women were involved both in the raw silk and yarn trade: Βυζαντινῶν Βίος καὶ Πολιτισμός (Athens, 1948), 2:233. To be sure, given the status of women at the time, their active involvement in running businesses was probably limited. Nevertheless, their participation, as implied in the *Book of the Eparch,* was apparently prompted by their need to take over the businesses of their incapacitated or deceased spouses to support themselves and their families, although undertakings by women possessing skills and business acumen should not be ruled out altogether. Besides, as already discussed, the reference in provision VII.2 of the *Book of the Eparch* is not to "poor" women but to women of servile status, for whom societal perceptions were not a matter of great concern and who probably ran shops in the raw silk trade as widows of slave-proxies and possibly as independent operators in raw silk processing since the guild of katartarioi accepted slaves (VII.3). The assertion that the katartarioi did not admit slaves as guild members (by Stöckle, *Byzantinische Zünfte,* 58; Zoras, *Corporazioni bizantine,* 175; and A. Vogt, *Basile Ier et la civilisation byzantine à la fin du IXe siècle* [Paris, 1908], 391) has been convincingly refuted by Mickwitz: "Organisationsformen," 73 and n. 2, and Christophilopoulos, Ἐπαρχικὸν Βιβλίον, 52 n. 1.

[65] This view is also held by Christophilopoulos, Ἐπαρχικὸν Βιβλίον, 4, 36, 50; Mickwitz, "Organisationsformen," 72–74; A. D. Sideris, Ἱστορία τοῦ οἰκονομικοῦ βίου (Athens, 1950), 264; Mendl, "Les Corporations byzantines," 302, 304, 312–18.

[66] Put differently, the guild was an association of owners and operators of trade or manufacturing establishments, not a halfway labor union, as wage workers were not members. This, inter alia, explains the involvement of Jews in the silk industry despite the fact that they were not allowed to become guild members. They were hired as workmen, apparently from among those independent, mobile, and highly skilled operatives (μισθωτοί) whom the metaxopratai and serikarioi employed on a fixed-term basis, as discussed in pp. 275–76 and 293. Benjamin of Tudela found among the Jews in the capital "artificers in silk": *The Itinerary of Benjamin of Tudela,* trans. M. A. Adler (London, 1907), 14. J. Starr maintains that the Jews of Constantinople did not

The interpretation just advanced accepts the basic notion propounded by Stöckle and espoused by most historians, namely that metaxarioi and metaxopratai were synonymous terms, but it rejects the hypothesis that the metaxarioi were poor and not members of the guild of metaxopratai. Instead, this new interpretation views the metaxarioi as metaxopratai in servile status—a notion that renders accurately the animus of provision VII.2 and preserves the internal consistency of all provisions of the law concerning the trade in raw silk.

Melathrarioi: An Unappreciated Lot. Views concerning the work performed by the melathrarioi differ considerably. As already mentioned,[67] the melathrarioi have been mistakenly identified with the metaxarioi, on grounds that the former is an inaccurate transcription of the latter and that the term is incomprehensible, is not found in the sources, and is not connected etymologically with silk (μέταξα).[68] Yet, the term must have been familiar and was probably associated with a certain aspect of the product traded or its processing. Moreover, the melathrarioi cannot be regarded as metaxarioi because the formulation of provision VI.15, the "so-called" melathrarioi (οἱ λεγόμενοι μελαθράριοι), clearly refers to a distinct group of traders. Furthermore, identification of the melathrarioi with the metaxarioi would implicate the metaxopratai in the trade of inferior quality silk, which explicitly was the preserve of the melathrarioi (VI.15). By the same token, the hypothesis advanced by Nicole and Stöckle[69] that melathrarioi was a popular term for those metaxopratai dealing in damaged or soiled silk is equally indefensible. On the other hand, the identification of melathrarioi as "lathrarioi" (λαθράριοι), a derivation from (λάθρα = secretly), suggestive of illegal merchants trading on the sly,[70] entirely misses the mark. A final hypothesis, that the melathrarioi were spinners who processed the waste from the unraveling of cocoons (flock silk) or even dyers,[71] is also unlikely, as their inclusion in the section dealing with the metaxopratai suggests that they were regarded as traders and not as katartarioi or serikarioi. As traders, not unlike the metaxopratai, they would not have been permitted to process raw silk or spin waste (VI.14).

Imports of substandard raw silk and, especially, domestically generated waste silk

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include silk manufacturers but had among them tailors making silk garments: *The Jews in the Byzantine Empire, 641–1204* (Athens, 1939), 28–29. A. Andréadès also is of the view that the majority of Jews in the capital and later in other provincial towns were engaged as workers or dyers in the silk industry: "The Jews in the Byzantine Empire," *Economic History* 3.9 (1934): 9. On the other hand, S. W. Baron (*The Jewish Community* [Philadelphia, 1942], 1:365), Zvi Ankori (*Karaites in Byzantium: The Formative Years, 970–1110* [New York, 1959], 142), D. Jacoby ("Les quartiers Juifs de Constantinople à l'époque byzantine," *Byzantion* 37 [1967]: 181), and Lopez ("Silk Industry," 23–24), all maintain that the Jewish silk manufacturers in the capital were organized into a guild. However, Muthesius ("Byzantine Silk Industry," 10) has convincingly contested the existence of the Jewish silk guild, arguing that the only way Jews could be involved in the silk industry was as employees of metaxopratai or serikarioi. Furthermore, given the enforced division of labor among guilds, this hypothesis would either have confined all Jews to one stage of the industry's operations or have allowed their guild to integrate vertically—both untenable positions.

[67] See above, p. 276.

[68] Christophilopoulos, Ἐπαρχικὸν Βιβλίον, 83 and 85 n. 2.

[69] Nicole, *Livre du Préfet,* 81; Stöckle, *Byzantinische Zünfte,* 25–26.

[70] Attributed to Sjuzjumov by Loos in Mendl, "Les Corporations byzantines," 310 n. 17.

[71] Mickwitz, "Organisationsformen," 74–75; Muthesius, "Byzantine Silk Industry," 33, 39. Zoras, *Corporazioni bizantine,* 173, viewed the melathrarioi as spinners, while Freshfield thought they were either dyers or dressers of raw silk: *Byzantine Guilds,* 23 n. 1.

made the involvement of the melathrarioi in the silk trade worthwhile. The quality of the silk is affected by the color, configuration, and fineness of the cocoons, as well as by its source as cultivated or wild. Also, cocoons could be damaged and reeled silk soiled during transport.[72] The melathrarioi bought such blemished silk directly from external suppliers, participating along with the metaxopratai in the collective purchase. It is improbable that the melathrarioi were compelled to buy the low-grade silk through the intermediation of the metaxopratai, as has been asserted,[73] because such transactions would run counter to the statutorily mandated division of labor between the two groups. Besides, because of their special knowledge in handling waste silk, the involvement of the melathrarioi in the negotiations with the external suppliers, whether as members of the negotiating team or in an advisory capacity, was essential to detect and avoid underhanded deals. In turn, the melathrarioi sold the imported low-grade and damaged silk to, or entered into à façon contracts with, specialist katartarioi who spun it into yarn.[74]

A more important source of waste was the material discarded by the katartarioi in the course of processing raw silk into yarn.[75] This waste material was a valuable by-product and gave rise to profitable processing and trading activities. Probably, not all katartarioi processed the accrued waste material themselves, preferring to turn it over to katartarioi specializing in the spinning of waste. Either way, the coarser, inferior quality yarn thus produced was sold back to melathrarioi as the solely authorized dealers, who in turn sold it to serikarioi for the manufacture of cheaper and blended mix-fiber silks.[76]

Contrary to expressed views,[77] there is no evidence that the melathrarioi operated outside the guild system. If the melathrarioi were picking up the crumbs of the silk trade and were not guild members, as Lopez maintains, there would be no particular reason for the authorities to demarcate their function and levy penalties for deviant conduct (VI.15), deal with them along with the metaxopratai in the *Book of the Eparch,* or try to curb the alleged ambitions of these upstarts. Also, no evidence is adduced to prove the assertion that the social standing of the melathrarioi was inferior to that of the metaxopratai or that they were not part of the middle class.[78] Trading in inferior quality silk need not be demeaning; nor need it imply that the merchants involved were worse off or belonged to a lower class. Use of the expression "so-called" (λεγόμενοι) in provision VI.15 should not be viewed as connoting a condescending or pejorative reference to melathrarioi but rather as an ascription to a commonly known specialized trade. The fact remains that the authorities were eager that as much as possible of this waste material

[72] For details, see note 162.

[73] Loos asserts that the melathrarioi purchased silk of inferior quality either directly from abroad or from metaxopratai: in Mendl, "Les Corporations byzantines," 310 n. 17.

[74] See above, pp. 274–76.

[75] Waste silk comprised floss silk (i.e., rough loose filaments of short length obtained from damaged cocoons and parts of the cocoon that cannot be reeled), flock silk (i.e., short and fluffy fibers left over during the reeling process), and noils. These fibers were combed and spun to make a coarser yarn. See references at end of note 14.

[76] Muthesius hypothesizes that the melathrarioi spun the waste silk and sold the yarn to metaxopratai or to serikarioi: "Byzantine Silk Industry," 33. As already argued, the melathrarioi were not spinners. Also, there is no apparent reason to believe that the statutorily mandated division of labor among and within guilds was not adhered to in the case of melathrarioi.

[77] Lopez, "Silk Industry," 16; Muthesius, "Byzantine Silk Industry," 39.

[78] Stöckle, *Byzantinische Zünfte,* 25–26; Lopez, "Silk Industry," 15; Zoras, *Corporazioni bizantine,* 172–73.

be recovered because of its high value, and, as this activity formed an integral part of the silk industry's operations, it was only logical that it be incorporated in the guild organizational structure and be dealt with in the *Book of the Eparch.*

Manufacturing Structure

Yarn Production: Dimensions of the Activity.[79] The katartarioi engaged in all facets of cocoon and raw-silk processing that led to the production of yarn.[80] Depending on the condition of the silk when acquired,[81] they unraveled and reeled stifled cocoons, degummed reeled silk,[82] and twisted silk threads to produce yarn of the desired tensile strength.[83] Some katartarioi may have specialized in the spinning of coarser yarn from waste or low-grade silk, while others very likely processed raw silk à façon on behalf of metaxopratai. These successive and distinct sub-processes resulted in an elemental division of labor at the shop-floor level, which required a skill-mix acquired through apprenticeship and long practice. The primary source of labor was the family and possibly its slaves. Depending on the size of its operations, the family hired qualified workers or trained unskilled laborers as necessary. The katartarioi operated as principals, that is, as independent craftsmen, always within the guild system, owning or leasing their workshops.[84] In more integrated establishments, different space arrangements were necessary because of the particular working conditions and environmental demands of individual sub-processes (e.g., degumming as opposed to reeling).[85] At times, established katartarioi had direct access to imported raw silk but only up to their processing capacity.[86] For the

[79]Yarn production involved the following main tasks: unraveling and reeling; degumming; doubling and twisting; spinning of waste and floss silks. See Muthesius, "Byzantine Silk Industry," 31–32; eadem, "From Seed to Samite," 124.

[80]Christophilopoulos, Ἐπαρχικὸν Βιβλίον, 85; Mickwitz, "Organisationsformen," 71 n. 3; Koukoules, Βυζαντινῶν Βίος, 187, 233. Stöckle believed that the katartarioi were involved only in twisting and not in unraveling because they acquired the raw silk reeled: *Byzantinische Zünfte,* 26. Muthesius asserts that the katartarioi only degummed the filament silk, while the metaxopratai performed the reeling and initial twisting with hired labor when the raw silk was not imported reeled; the serikarioi added twist to meet their own requirements for tensile strength: "Byzantine Silk Industry," 32–33, 35, 39. The notion that the metaxopratai were involved in any stage of the raw silk processing using hired labor has been shown to be untenable (see above, pp. 271–74).

[81]As stifled cocoons or reeled silk. See above, pp. 265–67.

[82]Degumming is a process whereby the skeins of raw silk are soaked in warm water with soap to remove the cericin (see note 9). This makes the thread lustrous, soft, pliable, and workable, and enhances its dyeing properties. Degumming reduces the silk's weight by about 25%.

[83]Twisting or throwing involves doubling and twisting several strands of silk together to increase the tensile strength of the yarn. Although the task can be performed before degumming, most yarn is twisted after degumming. See the references at end of note 14, for details regarding the degumming and twisting processes.

[84]See above, pp. 279–80 and note 46.

[85]See below, p. 289 and note 99.

[86]See above, p. 268. The *Book of the Eparch* does not specify the timeframe of such purchases: a fortnight's supply, a month's, several months'? The quantities in each instance differ by multiples, and this has important implications for inventory management. Mickwitz asserts that the katartarioi joining the purchase cartel met yearly requirements: "Organisationsformen," 73. However, such a pattern-setting conjecture seems impractical, if only because it would have been very costly for craftsmen to carry such a large inventory of a high-priced raw material over such a long period, particularly since katartarioi were not allowed to sell unprocessed silk (VII.1). Although irregular, shipments to the capital were not infrequent, as imports originated in regions outside the empire as well. As mentioned in note 59, an array of factors could also affect

most part, the katartarioi procured raw silk obtained from the metaxopratai for cash or on credit.[87]

The *Book of the Eparch* enjoined the serikarioi to buy the silk (μέταξαν) from the metaxopratai, but it did not specify the silk's form (VIII.8). This ambiguity has given rise to a long-standing controversy. Following Stöckle, the prevailing view holds that, in this instance, μέταξα means *yarn,* which the katartarioi could sell only to metaxopratai. The rationale is that, while the law nowhere indicates that the serikarioi were obliged to buy the yarn from the katartarioi, it explicitly requires them to purchase it from the metaxopratai. Hence, the katartarioi, having processed the raw silk, must have sold the yarn back to metaxopratai in the open market, who in turn supplied the serikarioi.[88] Attempts have been made to debunk the predominant theory, but, although astute and intriguing, the hypotheses advanced cannot stand scrutiny.

Backward Integration into Yarn Production: A Strained Thesis. Simon has challenged the prevailing thesis and asserts that the katartarioi were allowed to sell yarn directly to serikarioi who either did not have the requisite processing facilities or were not interested in processing the raw silk themselves. In his view, the hypothesis that the serikarioi processed raw silk as well does not conflict with provision VIII.8, because the provision simply states that the serikarioi must meet their demand for raw silk from metaxopratai and not from external suppliers. A stipulation enjoining the serikarioi to procure silk they did not prepare themselves from katartarioi would have been superfluous, as they were the only source of supply. Besides, the term μέταξα has various shades of meaning and is used loosely in the *Book of the Eparch.* Thus, serikarioi unable or unwilling to produce *yarn* in-house made their purchases directly from katartarioi; those who had the

procurement requirements and timing. Finally, the katartarioi had ready access to metaxopratai to cover shortfalls, which was likely to have been less expensive than carrying excess inventories that tied up capital and space. In this connection, it should be noted that raw silk requirements can be determined only *grosso modo.* Estimates based on the equipment in operation or number of workers employed are unreliable. Capacity utilization of existing facilities and workforce output can vary considerably depending on total factor productivity which, inter alia, is affected by organizational arrangements, space, working methods and work ethic, the tensile strength demanded of the yarn to be produced, and market demand. Apparently, enforcement rested on *bona fides,* spot checks, and the deterrent effect of the severe penalties for violators (VII.1).

[87]According to Mickwitz, the katartarioi relied heavily on suppliers' credits because most of them were poor: "Organisationsformen," 73. The market position of the katartarioi and their likely economic situation is discussed below, pp. 310–19. For the potential savings in working capital to be reaped by entering into à façon agreements, see above, p. 275.

[88]Stöckle, *Byzantinische Zünfte,* 27–28; Christophilopoulos, Ἐπαρχικὸν Βιβλίον, 83, 86; Mickwitz, "Organisationsformen," 71–72; idem, "Un Problème," 26; Lopez, "Silk Industry," 19; Muthesius, "Byzantine Silk Industry," 35, 39. While Simon, "Seidenzünfte," 33 nn. 47 and 48, points out the concurring views of Sjuzjumov and Kazhdan, he himself dissents (see below, pp. 284–89). Mayer (*BZ* 21 [1912]: 532) accepted Stöckle's view that the katartarioi were twisters (see note 80), but maintained that they sold yarn directly to serikarioi. In his view, the term metaxopratai in provision VIII.8 was much broader and meant to differentiate between all indigenous silk merchants and processors, i.e., including the katartarioi and external suppliers. Hence, he suggested, the serikarioi could buy yarn directly from the katartarioi without the intermediation of the metaxopratai. This hypothesis runs contrary to the sharp distinction made in the *Book of the Eparch* between metaxopratai and katartarioi and their respective guilds, as Christophilopoulos has pointedly observed: Ἐπαρχικὸν Βιβλίον, 86 n. 1. Moreover, this conception blurs the clearly distinct functions of the two groups and, in so doing, runs counter to the all-embracing provision (XVIII.5), which prohibits the concurrent practice of two trades.

requisite productive capacity bought the raw silk from metaxopratai in the form of reeled silk; and those in need of gummed yarn procured it from metaxopratai who had imported it in this form. However, gummed yarn was used only for the manufacture of silks to be degummed and dyed *after* they had been woven and their production accounted for a small fraction of the total output. Therefore, the bulk of the yarn was produced in degummed form jointly by katartarioi and serikarioi.[89]

Simon goes on to question the notion that the silk industry operated on strict rules of division of labor, as the *Book of the Eparch* does not define in precise technical terms the respective functions of the metaxopratai, katartarioi, and serikarioi. The provisions about the serikarioi, in contrast to those for leather workers (XIV), do not differentiate between specific tasks performed during the manufacturing process. Hence, the serikarioi could also unravel, degum, and twist the silk filaments, performing in parallel the same tasks as the katartarioi. Also, no stipulation forbade the serikarioi from processing raw silk (καταρτίζειν), while the degumming and dyeing processes are closely connected and difficult to separate. Furthermore, if the metaxopratai had been allowed to be involved in yarn production, they would have deprived the katartarioi of their livelihood, appropriating work otherwise reserved for the katartarioi and, in addition, triggering competition between the two groups. The serikarioi, on the other hand, produced an intermediate product, which they did not sell but used themselves in the manufacture of finished goods. Compulsory guild membership (*Zunftzwang*) did not imply that the members of a guild were not allowed to perform tasks that other guilds made a business of, as long as this did not lead to market competition. Raw silk processing by serikarioi could not possibly lead to direct sales competition with the katartarioi. Nor could yarn production by serikarioi lead to competition for work, because they were not the only customers of the katartarioi; the latter also met the demand of private households. Besides, the katartarioi were small producers who hardly ever employed hired workers, and it is not certain whether their output even began to satisfy the requirements of the serikarioi. Finally, the involvement of the serikarioi in yarn production explains their need to hire workers, as well as the necessity for special provisions to regulate such hirings (VIII.10, 12). In contrast, no such provisions applied to the katartarioi.[90]

In the same vein, Mendl hypothesized that the katartarioi were both yarn producers and weavers, who manufactured simple undyed silk fabrics, as opposed to the high-value dyed silks produced by the serikarioi. Although distinct, the two processes were not performed by different guilds as was later the case in Venice; they were undertaken in parallel and not as successive phases of the productive process. Put differently, the serikarioi did not take over where the katartarioi left off. Mendl based his argument on the following logic: the *Book of the Eparch* does not stipulate that the serikarioi should buy yarn (*soie tordue*) from the katartarioi; on the other hand, μέταξα refers to raw silk (*soie grège*) in all other instances, and must do so in provision VIII.8; hence, there is no reason to resort to a strained interpretation of μέταξα as yarn. Clearly, the serikarioi bought raw silk.

[89]"Seidenzünfte," 26–32, 34, 44–46. Muthesius, too, does not exclude the possibility that the katartarioi sold yarn directly to serikarioi: "Byzantine Silk Industry," 33.
[90]Simon, "Seidenzünfte," 24, 26–28, 32–34, 44–46.

Furthermore, it has never been demonstrated that καταρτίζειν is not a technical term applicable to weaving as well.[91]

These are bold but unconvincing hypotheses. Mendl depicts the katartarioi as weavers as well, stretching the meaning of καταρτίζειν (to dress) to include weaving, a meaning without etymological foundation. Καταρτίζειν clearly denotes actions pertaining to a preparatory stage. Moreover, the law's section on katartarioi contains no provisions similar to those in the section on serikarioi regarding the kind of silks to be manufactured, dyes to be used, inspection of facilities and output, disposal of silks, labor hiring procedures, or sale of skilled slaves to foreigners (VIII.1–5, 7, 9–12), as would be expected from a vigilant bureaucracy eager to enforce the rules strictly and uniformly. This very omission underscores the perception of katartarioi as the sole producers of an intermediate product, that is, yarn, making unnecessary the surveillance of such activities by the eparch to ensure compliance. Furthermore, the alleged division of labor between katartarioi and serikarioi, the former producing less valuable and the latter more expensive silks, is arbitrary and unenforceable, since, in the absence of an explicit prohibition, nothing could stop the katartarioi from manufacturing dyed silks or the serikarioi from producing undyed articles, if this was to their best interest. Finally, there are instances in the *Book of the Eparch* where it is quite evident that μέταξα means yarn, as in provisions VII.6 and VIII.4, suggesting that the term does not always imply raw silk, as has been alleged.

The serikarioi, according to Simon and Mendl, were also raw silk processors, performing the entire gamut of tasks otherwise assigned to katartarioi. Yet, the respective sections on katartarioi and serikarioi in the *Book of the Eparch* provide no indication that this was indeed the case. Section VII about katartarioi nowhere indicates that they manufactured silks (ἐργάζονται ἱμάτια), whereas it clearly states that they processed raw silk ((κατ)ἐργάζεσθαι τὴν μέταξαν). On the other hand, section VIII on serikarioi does not even hint at their involvement in raw silk processing (καταρτίζειν τὴν μέταξαν). In both instances, critical terms are absent. Further, the alleged need of the serikarioi to hire workers to produce yarn in-house has been misconstrued. The employed workers were very skilled, highly paid, and mobile, were hired for the duration of a particular job, and performed tasks strictly related to weaving, dyeing, and tailoring; they were not hired to do routine jobs on a steady basis.[92] Also, although consecutive, degumming and dyeing are altogether different processes requiring distinct skills and are technically conducive to a division of labor. There is therefore no compelling reason that they be performed under the same roof, especially since dyeing, unlike degumming, is an intermittent activity. Smaller serikarioi probably did not have in-house dyeing facilities.[93] Finally, the fact that the katartarioi could participate in the collective purchase of raw silk from external suppliers (VII.4, 5), while the serikarioi, though presumed wealthier, were explicitly excluded (VIII.8), indicates the law's intention that the serikarioi not expand their activity into yarn production, and not simply to protect the purchase monopoly of the metaxopratai. If the serikarioi had also been yarn producers, it would be only natural that they

[91] Mendl, "Les Corporations byzantines," 306 and n. 16; see also Loos's comments in idem, 309–11 n. 17. Runciman also shares this view: "Byzantine Trade," 155.

[92] See below, p. 293.

[93] Ibid.

too be invited to participate along with the katartarioi and under the same conditions. The fact that they were not suggests that they had no involvement in raw silk processing.

In this context, Simon queries why the metaxopratai were explicitly denied the right to branch out into yarn production (VI.14) while the serikarioi were not? Or, why there were no explicit restrictions preventing katartarioi from becoming serikarioi, or serikarioi from becoming metaxopratai? His answer is that the rules governing the division of labor were lax and that one guild could take over another's functions as long as this would not lead to market competition.[94] However, the absence of explicit restrictions on every possible inter-guild move is not surprising. The law's intention was to curb the parallel practice of trades or crafts in whatever form, not the movement from one occupation to another within the guild system. This explains the law's prohibition of vertical integration (expansion into preceding or succeeding phases of production or distribution: IV.7, VI.14, VII.3, VIII.6) and horizontal integration (expansion into similar or diverse activities conducted by other guilds: IV.1, V.1), whether individually or through a partnership leading to a union of trades. Insistence on a strict division of labor prevented enterprise growth unrelated to market demand, dominance of the market by a few large firms, and weakening or elimination of competitors based on sheer market power—in short, monopolization or lessening of competition. The specific provisions enjoining members of the silk guilds, as well as members of other guilds (II.1, X.6, XI.2, XIII.1, XV.1), from practicing simultaneously another trade or craft were indicative and conditional: if the guild member relinquished his current occupation, he could take up the desired activity. Serikarioi could therefore legally engage in yarn production (or any other trade for that matter), but only if they were prepared to give up weaving. Guilds not explicitly enjoined were subject to the blanket provision XVIII.5.[95] Indeed, the for-

[94] "Seidenzünfte," 32–33, 45.

[95] The provision of the *Book of the Eparch* enjoining guild members from enrolling in more than one guild at a time is a repetition of the same stipulation in the *Basilics,* LX.32.1: ἑνὸς δὲ μόνον ὀφείλει συστήματος εἶναι καὶ ἀναχωρεῖν τῶν λοιπῶν. Several hypotheses have been advanced concerning the rationale for this prohibition. J. P. Waltzing believes the rule was enacted to keep guilds from banding together and becoming a threat to the state: *Étude historique sur les corporations professionnelles chez les Romains* (Louvain, 1895), 1:147 n. 1, 150, 354 and n. 3. Stöckle argues that the rule aimed to foster labor specialization, facilitate state supervision of industrial, trade, and labor activities, make easier the protection of industrial secrets, and thwart theft and the purchase of prohibited merchandise: *Byzantinische Zünfte,* 98–99. C. M. Macri maintains that the restriction intended to ensure political stability by keeping the industrial and trade communities under constant submission to the imperial will; to simplify the detailed supervision of manufacturing processes so as to sustain the industry's high reputation; to further labor specialization and productivity; to curb inter-craft rivalry as antithetical to Christian ethics; to facilitate the levy of taxes and prevent fiscal fraud; and to facilitate the exercise of the purchase monopsony in imports: *L'Organisation de l'économie urbaine dans Byzance sous la dynastie macédoine* (Paris, 1925), 35, 40–41, 43, 46, 57–58, 61. Zoras asserts that the provision simplified administrative control, promoted the division of labor and specialization, and impeded the coalescence of guild interests that could threaten public order and the state itself: *Corporazioni byzantine,* 76–78. In reality, these hypotheses seem peripheral at best. As far as silks were concerned, state control did not focus on maintaining quality standards but on preventing the production of prohibited articles. Quality was largely determined by market demand, innovative activity, and competition: see below, pp. 319, 323, 325, and note 196. In a few instances, a guild's designated domain was broadened: subspecialties with a limited number of craftsmen (e.g., dyers, melathrarioi) that did not justify the creation of a separate guild were placed under the domain of a closely related guild (e.g., serikarioi, metaxopratai) in order to meet technico-economic imperatives; see also below, pp. 292–93. On the other hand, administrative convenience seems to have been more apparent than real. Finally, the potential threat to law and order has been based largely on social

mulation of this provision, designated as cardinal (κεφαλαιωδεστάτη διάταξις), that no one could enter the craft of another and practice both concurrently but had to choose between them and inform the eparch of his choice, leaves no doubt that the simultaneous practice of weaving and raw silk processing, whether or not the output (yarn) was marketed, contravened the law because it violated a guild's inalienable right to practice exclusively its designated craft.[96]

Simon's argument that the output of the katartarioi was barely sufficient to satisfy the needs of the serikarioi and that the latter had therefore to take up in-house yarn production lacks foundation. First, no evidence has been adduced to prove persistent shortages that would justify the involvement of the serikarioi in yarn production. More important, continued shortages would have led to higher prices and increased yarn production through expansion of existing capacities and/or new enterprises. The guild of katartarioi included establishments of a wide range of sizes, as is evidenced by those katartarioi who were invited to partake in the wholesale collective purchases of imported raw silk. Entrenched katartarioi would have seized the opportunity to increase their productive capacity through self-financing, borrowing, and partnerships or a combination of these methods. Higher profit margins would have attracted new entrants. Metaxopratai very likely would also have stepped in, extending credit or entering into à façon arrangements with less liquid katartarioi to help them build up their capacities, as the gestation period for investments in raw silk processing was rather short. By being forthcoming, the metaxopratai would have kept the serikarioi at bay and secured the yarn market for themselves, and they would have done so without breaching the law. Simon's dim view of the katartarioi emanates from the common misperception of them as an underclass of small craftsmen unresponsive to market signals and without financial means.[97]

Even if, as Simon suggests, shortfalls induced the serikarioi to meet their yarn requirements through in-house production, it is unlikely that all serikarioi could afford or would be willing to organize and operate raw silk processing facilities. Larger serikarioi would have seen this as an opportunity to exploit a niche in the yarn market and would

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considerations and not on the more critical implications of concentration of economic power in the hands of a few in the capital (see above, p. 269). Fundamentally, the principle of "one man, one trade" was intended to curb the cumulation of monopoly power by entrenched guild members.

[96] The *Book of the Eparch* takes the same approach when it only sparingly prohibits in an explicit way any attempt by a guild member to raise the rental of another's workshop deceptively or even openly (IV.9, IX.4, X.3, XI.7, XIII.6, XIX.2), relying in other instances on the blanket provision XVIII.5.

[97] Historians have invariably depicted the katartarioi as lower-class craftsmen, largely servile, poor, and of ill repute: Mickwitz, *Kartellfunktionen,* 212–13; idem, "Un Problème," 25–26; idem, "Organisationsformen," 72–73; Lopez, "Silk Industry," 16 and n. 3, 18–19; Simon, "Seidenzünfte," 24, 45–46; Muthesius, "Byzantine Silk Industry," 35. This unrealistic perception derives from a misreading of provisions VII.2 and 5, as discussed above (pp. 276–78) and below (pp. 310–17), and a misunderstanding of provision VII.6 which aimed to set standards for the orderly conduct of commercial transactions, requiring the katartarioi to conduct their affairs in a businesslike manner. Specifically, the katartarioi were forbidden to adulterate or sell their wares dishonestly (μὴ καπηλεύειν τὴν μέταξαν), e.g., by adding sizing to increase its weight. They were also forbidden to conduct business in a noisy, boorish, irascible, or importunate manner. Certainly, the provision did not aim to hinder haggling (*Schachern*=καπηλεύειν), as Simon hypothesized: "Seidenzünfte," 44. Bargaining is an inseparable and essential part of trade negotiations, and it would be unthinkable to try to stop it by fiat. On the other hand, Simon's dismissal of Sjuzjumov's view that provision VII.6 intended to hinder katartarioi from drinking away their earnings is well-taken: ibid., n. 95. Generalizations based on such misconceptions are clearly wide of the mark, and have unjustifiably maligned the katartarioi as a professional group.

have been tempted to build excess capacity to satisfy the needs of fellow serikarioi, possibly at more competitive prices than offered by the katartarioi since the serikarioi were in a position to price at marginal cost. This would have created market competition between serikarioi and katartarioi that not only was against the law but that would have seriously threatened the latter's very existence—an intolerable situation to be resisted by the guild of katartarioi and the authorities. To guard against such an eventuality, avoid de facto validation of such an encroachment, and prevent legitimization of such transactions, the raw silk processing activities of the serikarioi would have been policed to ensure that their yarn production did not exceed their own requirements. Yet, no such concern is voiced in provisions VIII.3 and 4, which refer only to inspections relating to weaving and dyeing, stamping of fabrics, and conformity of the cloth produced with statutory regulations. Legislative silence on such an important matter suggests that the issue never arose. In consequence, it is unlikely that the serikarioi ever engaged in yarn production.

Nor does it follow that the involvement of the metaxopratai in yarn production would have threatened the livelihood of the katartarioi, in a way that the serikarioi would not, because the katartarioi could have fallen back on household demand. Despite Simon's assertions, it is immaterial which, if any, group encroached on yarn production because the outcome would have been the same. In either case, the displaced katartarioi (whether owners of workshops or laborers) would have been absorbed by the intruding group, and only the employer and possibly the place of employment would have changed. Furthermore, the alleged substitute demand from private households, which was insignificant in volume, could hardly have made up for the loss of business incurred by allowing the serikarioi (or the metaxopratai, for that matter) to engage in yarn production. Although silks undoubtedly were coveted, most could not afford them, and few of those could resort to home production.

Simon believes further that impoverished and wretched katartarioi, producing small quantities of yarn without outside help, supplied a contingent of equally small-scale serikarioi, also operating with modest equipment and without hired workers. In his view, both groups performed their work at home.[98] However, institutional and operational imperatives militated against home-based activity. The tenor of the regulatory apparatus fostered the organization of silk manufacturing as a workshop industry, in particular, the formation of clusters of specially built sheds in designated areas. Such concentration, unlike a dispersed household industry, facilitated the exercise of state control over the firms' activities (IV.1, 3, 4, 8; VI.13, 16; VIII.5, 7, 9). Space requirements and environmental regulations concerning fire hazards, smoke, and noxious fumes precluded the conduct of such activities in residential areas.[99] Finally, the technological and production requirements of tasks that could not be performed efficiently, if at all, in cramped home settings and the need to ensure management control over production processes liable to costly human errors reinforced this tendency.[100]

[98]"Seidenzünfte," 45–46.

[99]See D. Ghinis, "Τὸ Ἐπαρχικὸν Βιβλίον καὶ οἱ Νόμοι Ἰουλιανοῦ τοῦ Ἀσκαλωνίτου," Ἐπ.Ἑτ.Βυζ.Σπ. (1937): 187.

[100]See below, pp. 319–20. Muthesius ("From Seed to Samite," 127, 129) disputes that one serikarios alone could perform the range of tasks involved at this stage of production, as Simon implies. It is doubtful that he could even handle a single process, e.g., weaving or dyeing.

The Circuitous Yarn Distribution Pattern: An Explanatory Hypothesis. A nagging question still remains: what special function(s) were the metaxopratai expected to discharge that the authorities entrusted their guild with a monopoly in the sale of yarn, not allowing the katartarioi to sell yarn downstream directly to the serikarioi as would seem to be more rational? One could hypothesize that the metaxopratai as a group somehow asserted themselves when the ordinance was drawn up and managed to wrest this prerogative from the authorities. By steering the distribution of yarn their way, the metaxopratai would expand their activity and profits without encroaching on the exclusive right to process raw silk that was held by the katartarioi (and to whom it was immaterial whether yarn was sold to metaxopratai or serikarioi). However, viewing this seemingly unwarranted arrangement as simply a case of the authorities yielding to pressure is a facile explanation, as it avoids important underlying issues and ignores the possibility that a set of practical considerations may well have been the determining factor. The following three-pronged hypothesis attempts to provide a more plausible explanation.

The circuitous distribution pattern that was adopted was probably prompted by the need to establish a workable information gathering network to conduct efficiently the raw silk import trade from which all parties stood to gain. To exercise more intelligently their purchase monopsony, the metaxopratai had to have current information about the proximate level of the prospective aggregate demand (=total demand less inventory) for raw silk before each market day. This information enabled them to estimate the gap between domestic demand and external supply,[101] establish negotiable base prices and an initial bargaining position, calculate the contributions of the membership, and determine whether katartarioi should be invited to secure supplemental funds for the upcoming purchase.

In a metaxopratai → katartarioi → serikarioi model, the information supplied to the metaxopratai would basically reflect the estimates of the katartarioi, which, apart from the inherent difficulties in assessing raw silk requirements,[102] were subject to inadvertent or intended distortions. In addition, the interposition of the katartarioi might impede the timely collection and transmission of the information. By contrast, in a metaxopratai → katartarioi → metaxopratai → serikarioi model, where the metaxopratai are simultaneously in contact both with the suppliers of the intermediate input and its end-users, the requisite information regarding demand requirements, productive capacities, and approximate inventory levels could be obtained promptly and largely unfiltered. This would enable the metaxopratai to determine aggregate requirements with much greater accuracy and enhance their bargaining power vis-à-vis suppliers. By the same token, a model whereby the metaxopratai sold raw silk to both katartarioi and serikarioi, while the katartarioi sold yarn to a segment of the serikarioi (Simon's model), would diffuse further the information network and exacerbate the shortcomings encountered in the first model.

Another useful service rendered by the metaxopratai pertains to inventory carrying, as inventory adjustments had significant balancing effects. In the face of irregular inflows

[101] The approximate level of the external supply of raw silk was known to the metaxopratai, as the eparch's office apprised the guild of the quantities that had entered the *mitata* (see above, p. 267).

[102] See note 86.

of raw silk and a fluctuating demand for silks, internal demand for and supply of input (raw silk and yarn) could be balanced in the short run only through inventory and/or price adjustments. But the katartarioi were not allowed to carry marketable surpluses, while the serikarioi could shift the burden of carrying inventories to the metaxopratai.[103] Therefore the financial and other costs associated with maintaining an expensive inventory sufficient to act as a buffer against disruptions in production and wide swings in prices fell squarely on the metaxopratai. Hence the need to defray the high costs involved.[104]

Finally, the official thinking may have been that in a competitive market the combined profit of the metaxopratai from handling both raw silk and yarn trade activities would still be lower than the sum of the profits extracted by the metaxopratai and the katartarioi if the two activities remained separate. The compression of the metaxopratai's mark-up, the tax they were obligated to pay to the state, which was based on the purchased quantities of raw silk (VI.4) and could not be readily passed on under competitive conditions, and the possibility that the serikarioi might be able to shift at least part of the increased cost to foreigners and the well-off (i.e., persons whose demand would not be influenced perceptibly and could afford higher prices) would make the palindromic trade pattern adopted by the authorities more palatable to all concerned.

The authorities' decision to interpose the metaxopratai between yarn and cloth production was not devoid of pragmatism and a certain rational basis considering that market intelligence was vital in negotiations with external suppliers; that the advantageous buffer function performed by the metaxopratai was not without cost, while the alternative would have been that it be discharged by the state via market interventions (e.g., price controls) and hence much less efficiently; that the metaxopratai could not shift the entire amount of the tax levied on them; that the serikarioi for the most part could offset the mark-up on the price of yarn by the reduced costs of inventory carrying and by passing it on to foreign traders and ultimately (through the retailers) to wealthy buyers; and that competitive forces were likely to keep the profit margins of the metaxopratai at the lowest possible levels.[105]

Weaving, Dyeing, Tailoring: Organization of the Production Process. The serikarioi manufactured silks with yarn produced by katartarioi but procured through the intermediation of the metaxopratai. The serikarioi were not integrated backward into yarn production or forward into retailing.[106] Still, silk manufacturing required fixed investments in weaving and dyeing facilities,[107] as well as working capital to meet operating

[103] Since the serikarioi could rely on the metaxopratai for immediate and uninterrupted access to yarn, they could reduce their inventories to a bare minimum and economize on working capital.

[104] Aside from storage costs, interest on commercial loans ran at over 11% a year in the tenth century: *Basilics,* XXIII.3; J. B. Bury, Appendix 13, in E. Gibbon, *The History of the Decline and Fall of the Roman Empire* (London, 1898), 5:533–34; G. Cassimatis, *Les Intérêts dans la législation de Justinien et dans le droit byzantin* (Paris, 1931), 120–23.

[105] See below, pp. 310–19.

[106] See pp. 284–89, 294–95, 297.

[107] There was a long-standing imperial monopoly in purple-dyed silks and the use of purple dyes of the finest quality (murex purple); see Codex Theodosianus, X.21.3; Codex Justinianus, IV.40.1; *Basilics,* XIX.1.80; *Book of the Eparch,* VIII.4. This led Stöckle to infer that the dyeing of silks both for imperial and public use was carried out in the imperial dyeworks as a state monopoly. Accordingly, the serikarioi were not

expenses, including costly inventories in inputs (e.g., silk yarn, dyestuffs), goods in process, and finished products. Also, it was a fairly risky business, subject to potentially costly human errors in design, dyeing, or weaving and to the fluctuations of market demand. Serikarioi had therefore to be persons of some substance although it is unlikely that all of them could afford to combine all of the various sub-processes, own their workshops, or employ large numbers of workers. The size of establishments in silk manufacturing must have varied widely.

The nature of the tasks performed by the serikarioi required special space arrangements, for example, sheds in separate but adjacent locations, and a mix of worker skills. Those who could not afford to own their workshops leased space from wealthy property owners.[108] Apparently, industrial space was in short supply at times, as is evidenced by the fact that those who surreptitiously or openly sought to raise rental rates for workshops were severely punished (XVIII.5). Skill specialization and the practical need for separate sheds to perform the different tasks and comply with safety and environmental requirements,[109] would, however, certainly not require that each sub-process or specialty

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allowed to dye themselves but had to procure dyed yarn from imperial dyers through the intermediation of the metaxopratai: *Byzantinische Zünfte,* 28–31. Boak holds the same view: "Book of the Prefect," 609 n. 6. However, the law (*Basilics,* XIX.1.80) referred to by Stöckle was amended by Novel 80 of Leo VI. Thus, although the provision still prohibited the private manufacture and sale of large pieces of silk fabrics dyed with murex purple (πορφύραν), it abolished every restriction regarding the sale of small pieces of purple-dyed silks. Besides, inferior quality purple dyes, which were freely marketed, could produce a range of red shades, e.g., purple, scarlet, or crimson, by applying different dyeing techniques. Cf. Jacoby, "Silk in Western Byzantium," 482–84. The confluence of certain compelling factors, namely that the prohibition to use murex purple to dye yarn or cloth (except for trimming clothes with purple pieces or borders) is repeated in the *Book of the Eparch* only in connection with the serikarioi (VIII.4); that the serikarioi are explicitly allowed to manufacture certain types of dyed silks (VIII.1, 2), while they are not expressly forbidden to engage in dyeing; the nonexistence of a dyers' guild; and the lack of any evidence that the katartarioi dyed silk yarn leaves no doubt that the serikarioi engaged in dyeing as well. Cf. Gehring, "Zunftwesen Constantinopels," 584; Zoras, *Corporazioni bizantine,* 176; Christophilopoulos, Ἐπαρχικὸν Βιβλίον, 65, 86; Lopez, "Silk Industry," 10–11 and 14–15; Simon, "Seidenzünfte," 34; L. Bréhier, *Le Monde byzantin: La civilisation byzantine* (Paris, 1950), 188. The work was largely performed by hired expert dyers, possibly freelance (see below, p. 293). Dyers specializing in purple dyeing were called πορφυροβαφεῖς or ὀξεοβάφοι: Koukoules, Βυζαντινῶν Βίος, 186. The serikarioi procured dyestuffs of inferior quality from dealers in perfumes (X.1) and murex purple dyes from state-authorized vendors (Πορφυροπῶλαι). See B. Koutava-Delivoria, "Les ὀξέα et les fonctionnaires nommés τῶν ὀξέων: Les sceaux et les étoffes pourpres de soie après le 9e siècle," *BZ* 82 (1989): 181–82 and fig. 3, no. 39.

108 See N. Oikonomidès, "Quelques Boutiques de Constantinople au Xᵉ s: Prix, loyers, imposition (Cod. Patmiacus 171)," *DOP* 26 (1972): 345–56. In this context, Jacoby maintains that the sale by metaxopratai and prandiopratai of their shops (ἐργαστήρια) to dignitaries and wealthy individuals was prompted by their illiquidity or their subjection to increased pressure from creditors who, taking advantage of their wealth and social status, brought them under growing financial dependence: "Silk in Western Byzantium," 477 and 479. Jacoby's assertion is gratuitous. In the first place, out of the five transactions mentioned by Oikonomides, only one involved sale of property by a guild member, that by a metaxoprates. The other four transactions involved wealthy individuals or members of the aristocracy. Secondly, it cannot be confidently concluded that financial straits were the real reason for the sale of the metaxoprates' property and, even so, that he had been squeezed by his lender, assuming indeed that lender was the buyer, something for which there is no proof. The metaxoprates might well have been the victim of adverse economic circumstances, old or sick, or willing to retire; he might have needed the money to meet obligations unrelated to his trade; or he might have wanted to increase his liquidity in order to expand his business while retaining use of the premises as a tenant. In any event, one case out of five does not provide grounds to infer the exercise of undue pressure by unscrupulous upper-class creditors over members of the silk guilds.

109 See above, p. 289.

be organized as an independent guild with the guild of serikarioi forming the superstructure, as has been asserted.[110] If indeed other guilds were involved in silk manufacturing, the *Book of the Eparch* would have not failed to mention them, as they were important constituent elements of the silk industry's organizational makeup. Significantly, the processing of raw materials, which is an integral part of the silk manufacturing process, is dealt with as a separate guild (katartarioi) in the law, and this is inconsistent with the notion that the guild of serikarioi was an amalgamation of several guilds. Similar subsumption of closely related activities under one guild also occurred in tanning and leatherworking (XIV.2) and the trade in pure and waste silk (VI.15). The prevailing setup implies only that managing larger undertakings with fairly unified operations, involving procurement, dyeing, weaving, tailoring, and marketing activities, entailed a degree of sophistication in production and financial planning, a developed sense of coordination of the various subprocesses, and the existence of a rudimentary pyramidal management structure.

Dyeing units were much smaller than weaving units and operated in shorter and intermittent intervals. This could cause process balancing problems and could have resulted in suboptimal utilization of capacity. Larger producers were able to achieve a proximate balance more easily because of high production levels, but smaller producers may have found it uneconomical to own and operate a dyeing facility, as equipment and highly skilled labor might have remained grossly underutilized. In such circumstances, it would have been beneficial for them to contract out this phase of their operations to larger serikarioi, an arrangement that would also have ensured fuller utilization of the large producers' facilities and cut-rate charges to small producers. Medium-sized producers, on the other hand, may have owned dyeing sheds but hired expert dyers on a fixed-term basis (μισθωτοί) to operate them as required.

Depending on the level of their activity, the serikarioi employed themselves, family members, their slaves, and hired labor. As in the case of metaxopratai, the law forbade them to enter into labor contracts exceeding one month or knowingly to take into their service the worker of another before the worker had completed the tasks for which he was paid by his current employer (VIII.10, 12). These provisions obviously refer to independent operatives commanding special, highly marketable skills in short supply: proficient carpenters, dyers, pattern and prototype designers, weavers, printers, embroiderers, or tailors, on whom the serikarioi had come to rely for the production of high-value fabrics and whose services were available only on a temporary basis, although such contracts could be renewed or renegotiated. Certainly, the *Book of the Eparch* was not referring to low-skill steadily employed workers whose numbers could be easily increased through training on the job.[111]

The state was eager to maintain an adequate supply of trained workers, considered

[110] Muthesius, "Byzantine Silk Industry," 14–15, 35, 39–40.

[111] See also above, pp. 275–76. The only way a person could acquire a skill was to practice the craft as an apprentice to an experienced craftsman. Though unstructured and probably unsupervised by the state, this was apparently a workable institutional arrangement for vocational training. The mandated and strictly hierarchical organizational structure of the industrial workforce of apprentices, journeymen, and masters found in the West, as well as the detailed regulations concerning apprenticeship, advancement, and conditions of work, did not exist in Byzantium.

to be a valuable community asset. To this end, the law inflicted severe penalties on those who sold outside the capital any slave employed as μισθωτός or a foreman (VIII.7). At the same time, the provision aimed to curb the export of know-how to foreigners and provincials alike, thereby hampering efforts of existing or prospective competitors to gain a competitive edge.[112] As a defensive and not uncommon tactic aimed at protecting industrial secrets, the measure made business sense, as thriving silk manufacturing centers already existed in the Islamic world. The prohibition of such sales to provincials as well was prompted by concern that these then-knowledgeable persons would eventually emigrate abroad, an action that was beyond the control of the authorities outside the capital. It is unlikely that the main thrust of the provision was to forestall external competition, as evidenced by the unrestricted importation of silks of comparable quality. It is also unlikely that the provision's extension to provincials was intended to shelter local industry and thwart the growth of rival manufacturing centers within the empire, as Lopez maintains,[113] as long as there were no restrictions on imports. Besides, the measure would have been ineffective in that regard because of the possibility of legal emigration of skillful free men enticed by sufficient incentives. Indeed, the measure could not, and did not, impede the development of silk manufacturing in Corinth, Thebes, Patras, Euripos, or Andros when the right economic conditions were met from the late tenth century onward.[114]

The ability of the authorities to thwart the tendency of more aggressive serikarioi to integrate vertically or horizontally has been dismissed uncritically. Lack of movement in this direction has been attributed to the thin market for silks rather than concern for the legal protection of guild equality.[115] Nevertheless, there is convincing evidence that the demand for silks was strong and growing.[116] Moreover, if the serikarioi dominated the other guilds, if there was a rising oligarchy of masters and the law could be flouted with impunity, as has been alleged,[117] a small market would have provided a strong economic incentive to serikarioi to expand their activities into other stages of production

[112]The rendition of provision VIII.7: ὁ οἰκέτην [,] ἢ μισθωτὸν ἢ ἐκλέκτην [,] ἐξωτικοῖς ἢ ἐθνικοῖς πιπράσκων as "whoever sells a slave, a hired worker, or an overseer to persons outside the city" is misleading, because it conveys the fallacious notion that the sale of both slaves and freemen was prohibited and that the sale of a workman, regardless of the level of his skills, was banned. See Nicole, *Le Livre du Préfet,* 37, and his French translation of the law in Ἐπαρχικὸν Βιβλίον, 164; Boak, "Book of the Prefect," 609; Freshfield, *Byzantine Guilds,* 26; Lopez, "Silk Industry," 23. The misunderstanding arises because a comma is missing after the words οἰκέτην and ἐκλέκτην in the Greek text. After the insertion, the passage reads "Whoever sells a slave, whether a hired worker or a foreman," as Koder has correctly emended: *Eparchenbuch,* 107. The provision could not possibly refer to freemen since only slaves could be sold. Also, the provision clearly implies that μισθωτοί were salaried persons possessing valuable skills and technical knowledge, since it places them on an equal footing with those who had supervisory capabilities, and explains the eagerness of the authorities to prevent their loss. The provision did not prohibit the migration or emigration of freemen, an equally convenient vehicle for the transfer of skills and know-how, probably because such voluntary departures were not anticipated. People with skills and ambition gravitated toward the capital; they were not leaving the city.

[113]"Silk Industry," 23.

[114]Harvey, *Economic Expansion,* 213–20; M. Angold, "The Shaping of the Medieval Byzantine 'City,'" *ByzF* 10 (1985): 11–16 and 24–25; idem, *The Byzantine Empire,* 86–87 and 281–82; A. P. Kazhdan and A. Wharton Epstein, *Change in Byzantine Culture in the Eleventh and Twelfth Centuries* (Berkeley, 1985), 41; Jacoby, "Silk in Western Byzantium," 461–71.

[115]Lopez, "Silk Industry," 19.

[116]See below, pp. 326–28.

[117]Lopez, "Silk Industry," 16, 18, 19.

and distribution to capture a greater share of the market. That they did not should be ascribed to the effective enforcement of the law's provisions.[118]

Weaving, Dyeing, Tailoring: Market Outlets. The market of the serikarioi comprised foreign and provincial wholesale traders, the local *vestiopratai,* and the Treasury (εἰδικόν). The Treasury probably bought silks retail in the open market from vestiopratai and prandiopratai, but probably the bulk of its purchases was procured wholesale by placing orders with serikarioi.[119] This would have enabled the Treasury not only to pay lower prices but also to stipulate its own specifications regarding design, color, and quality, and to fix convenient delivery dates. Such transactions are clearly alluded to in provision VIII.11, which penalizes the serikarioi if they delivered to the imperial warehouse garments that they had not manufactured themselves but had acquired from outside the capital (ἐξωκάματα). In this connection, Lopez asserts that the cloth the serikarioi supplied to the Treasury was a tax in kind (*munus*),[120] a view that is indefensible. Provision VIII.11 does not even hint at this notion, as it talks about delivery (διδούς), implying discharge of a commercial contractual obligation, not payment of a tax liability. If this had been such a levy, it would have been specified and quantified, as was the case for metaxopratai (VI.4). In any event, basic taxes had been monetized since the early ninth century, attenuating further the force of Lopez's argument. Rather than imposing a tax obligation, the stipulation enjoins the serikarioi from a certain course of action, defining in that way a behavioral pattern the serikarioi ought to follow in their commercial dealings with the Treasury. The provision requires no financial sacrifice of the serikarioi, nor does it generate a revenue for the *fiscus*. There can be no doubt that these deliveries reflected commercial transactions only and were devoid of the character of a *munus.*

The view has been expressed that the serikarioi sold only garments to vestiopratai, as the latter were forbidden to deal in unsewn silk fabrics (IV.1: ὀφείλουσιν ἐξωνεῖσθαι σηρικὰς ἐσθῆτας) to avoid competition with the serikarioi. By the same token, the serikarioi were not allowed to sell garments to consumers in direct competition with the vestiopratai, as the silk clothing trade was the latter's exclusive domain. If they wished to enter the clothing trade, the serikarioi had to give up manufacturing because they were not permitted to practice both concurrently (VIII.6). On the other hand, it has been thought that the serikarioi could sell unsewn silk fabrics freely, not only to foreigners but also retail to natives who made their own clothes at home or had the clothes made for them. This conclusion is based on provision VIII.5, which, in stipulating that silks cannot be sold to foreigners (ἐθνικοῖς) without the eparch's knowledge, uses the term "silks in general" (πραγματεία) rather than clothes (ἱμάτια). The inference is that, since the requirement for the eparch's permission is confined only to foreigners, the serikarioi were allowed to sell retail silk fabrics to natives. Since the sale of silk clothes to foreigners by

[118] See above, pp. 273–74.

[119] See J. F. Haldon, *Constantine Porphyrogenitus: Three Treatises on Imperial Military Expeditions* (Vienna, 1990), C289–90 for purchases of silks in the open market, and C226 for silks produced to order by the private sector.

[120] "Silk Industry," 8. Muthesius also talks about an "obligation" of the serikarioi to deliver certain silk garments to the imperial storehouse: "Silken Diplomacy," in *Byzantine Diplomacy: Papers from the Twenty-fourth Spring Symposium of Byzantine Studies,* ed. J. Shepard and S. Franklin (Aldershot, 1992), 246.

vestiopratai was forbidden (IV.1, 4), provision VIII.5 is seen as directed at dealings in silk fabrics.[121]

Closer examination of the relevant provisions, however, suggests that the serikarioi did not retail unsewn fabrics to either foreigners or natives but that they did wholesale unsewn fabrics not only to foreign and provincial silk traders but to vestiopratai as well.[122] The latter in turn retailed them to sojourning merchants. Specifically, provision IV.4 enjoins the vestiopratai to have garments and unsewn fabrics that are to be sold to foreigners (τὴν ἔθνεσιν δοθῆναι ὀφείλουσαν πραγματείαν) stamped by the eparch.[123] Merchants sojourning in the *mitata* (μιτατευόμενοι), on the other hand, were not allowed to purchase certain articles (IV.1) or *unsewn garments* (ἄρραφα ἱμάτια) except for their personal use, and these were required to have been cut and tailored in the capital (ἐν τῇ βασιλευούσῃ συγκοπτομένην, IV.8). The conjunction of these provisions leaves no doubt that the vestiopratai also dealt in unsewn silk fabrics, which they had to procure from the serikarioi.[124] Use of the term "silks in general" (πραγματεία) concerning sales to foreigners (VIII.5) implies that the serikarioi were dealing in both fabrics and clothing. Although the provision does not indicate whether such transactions were wholesale or retail, it did not have to. If the vestiopratai retailed unsewn fabrics, as they evidently did, then the serikarioi would not have been allowed to since such direct competition ran counter to the tenet of functional division among the silk industry's different activities. Therefore, the logical conclusion to be drawn from the passages referred to above is that the serikarioi sold unsewn fabrics and garments wholesale to vestiopratai and silk merchants, foreign and provincial.[125] As wholesalers, however, the serikarioi were not allowed to retail unsewn fabrics to natives, as has been mistakenly inferred.

Distribution of Silks

Domestically Produced Silks. The vestiopratai (merchants of domestically produced silks) routinely obtained their supplies of clothing and unsewn fabrics wholesale from the

[121] Simon, "Seidenzünfte," 34–35.

[122] Provision VIII.3 only forbids the serikarioi to sell cloaks whose price exceeds ten *nomismata*. There is no mention of unsewn fabrics. The only requirement (VIII.5) was that the eparch be apprised of all sales to foreigners (ἐθνικοῖς).

[123] Apparently, the requirement did not apply to Byzantine citizens.

[124] See also Muthesius, "Byzantine Silk Industry," 37. Some tailoring may have been carried on in the shops of the vestiopratai (IV.6).

[125] As a rule, there was no limit to the quantity of silk fabrics and clothes that foreign and provincial merchants could buy, as long as their sale was not explicitly forbidden (IV.1, VIII.3, IX.6); the sale was reported to the eparch (IV.2, 3; VIII.5); and the articles were stamped by his staff (IV.4, VIII.9). The purpose of having the silks stamped when produced and sold was not to guarantee product quality or trade mark; it served only to certify that the goods were *tradable,* i.e., not prohibited by the authorities for domestic consumption or export. Nevertheless, quantitative restrictions were imposed at times by commercial treaties. For instance, according to the 944 treaty, Russian merchants were not allowed to buy silks whose total value exceeded fifty nomismata: *The Russian Primary Chronicle: Laurentian Text,* trans. and ed. S. H. Cross and O. P. Sherbowitz-Wetzor (Cambridge, 1953), 75; I. Sorlin, "Les traités de Byzance avec la Russie au X^e s (II)," *Cahiers du monde russe et soviétique* 2 (1961): 449 and 457–58. Lopez's view, following earlier authors, that the Russian traders were allowed to purchase large silk fabrics valued up to fifty nomismata ("Silk Industry," 35 and references in n. 2), apparently derives from a misunderstanding of the relevant provision of the treaty. Muthesius also shares Lopez's opinion: "Silk, Power and Diplomacy in Byzantium," in eadem, *Studies in Silk Weaving* (as in note 6), 239.

serikarioi. Occasionally, noblemen and wealthy individuals used the vestiopratai as an outlet for small surpluses of their home-produced goods or for silks acquired as in-kind compensation for serving in the ranks of the imperial administration (IV.2). Purchases of purple and violet garments and garments whose price exceeded ten nomismata, from whatever source, had to be reported to the eparch so that he might know where these articles were to be sold (IV.2, 3).

In competition with the prandiopratai, the vestiopratai retailed their wares to residents of the capital, as well as to provincials and foreigners, mostly sojourning merchants not involved in the silk trade. Non-residents were subject to restrictions in their purchases: they were not allowed to buy purple or red silks of large sizes, unsewn garments except for their personal use, or garments valued in excess of ten nomismata (IV.1, 8; VIII.3). On departure, the purchased articles had to be declared to the eparch (IV.8).[126] These restrictions did not apply to the residents of the capital, who could buy in the open market silks of any size, quality, or price, and in unlimited quantities.[127]

Lopez maintains that the commercial activity of the vestiopratai was constricted, as both serikarioi and prandiopratai encroached upon their field despite the prohibition of the edict (V.1, VIII.6, XVIII.5). In his view, the very fact that the serikarioi were enjoined from acquiring raw silk and retailing silks proves that they tried to control all stages of production. Similarly, the prandiopratai infringed upon the domain of the vestiopratai, as the authorities were inclined to ignore their infractions because of the vestiopratai's ability to strike favorable deals in their wholesale purchases from foreign suppliers.[128] In short, Lopez seriously doubts that the eparch enforced the law rigorously and that, as a result, the tendency of dominant guilds to invade the province of weaker guilds remained unchecked. However, as has already been demonstrated, there is no indication that the principle of division of labor among guilds, as reflected in the prohibition of vertical and horizontal integration, was violated with impunity.[129]

Lopez argues further that the legal restrictions on trade opportunities prevented the vestiopratai from engaging in large-scale trade. As a result, they remained in an "inferior standing."[130] However, these presumed legal constraints could hardly have thwarted the expansion of an individual firm's activities within the guild's domain. Firms at all stages of the production process could increase their market shares by exploiting the growth in demand and by chipping away at the shares of fellow guild members through intra-guild

[126]The inspection and confiscation by imperial customs officers of the silks acquired by Liutprand of Cremona, a bishop and diplomat, on his departure from the capital (*The Embassy to Constantinople and Other Writings/Liutprand of Cremona,* trans. F. A. Wright, ed. J. J. Norwich [London, 1993], 202–4), attest to the state's readiness to enforce the regulations. But the incident alludes to occasional infractions of the legislation as well. Still, the possibility that the silks Liutprad acquired may have been smuggled out of the imperial silk factory cannot be dismissed: Jacoby, "Silk in Western Byzantium," 490 and n. 219. If, indeed, this was the case, it would imply that the strict supervision by the eparch's inspectors effectively precluded the stealthy production of prohibited silks.

[127]Lopez, "Silk Industry," 22.

[128]Ibid., 19–20.

[129]See above, pp. 273–74, 284–89, 294–95.

[130]"Silk Industry," 19. Frances, "L'État," 239–43; N. Oikonomidès, "Le Marchand byzantin des provinces (IX^{e}–XI^{e} s.)," in *Mercati e mercanti nell' alto medioevo: L'area euroasiatica e l'area mediterranea* (Spoleto, 1993), 658; idem, "Entrepreneurs," 156–57; Mickwitz, "Organisationsformen," 76; and Runciman, "Byzantine Trade," 153, also entertain the view that guild regulations impeded the development of large undertakings.

competition, as the provisions of the law neither secured a member's market position nor prevented the exit of uncompetitive enterprises. The law did not forbid price or non-price competition, nor did it limit the number of apprentices and workers a guild member could employ, prohibit trading on borrowed funds, impose quantitative or qualitative restrictions on the equipment used, or regulate production techniques and work processes, all of which it would have to do if the intention was to curb growth of individual enterprises. The policy aim was that increased market demand be shared by as many firms as possible and that this demand be channeled through cascaded, close-knit markets at each stage of the production process. Increased demand would be met by existing firms and/or new entry, as the number of firms that might be established within a guild was not predetermined. What the restrictions did do, as already indicated, was to curb the growth in the size of a firm at the expense of other enterprises in guilds either upstream or downstream—a development that was not the outcome of a genuine market growth and could lead to restraint of trade and monopolization. Besides, while integration would likely yield pecuniary advantages to the consolidated firms in the absence of price controls, it is debatable whether it would also have measurably improved economic efficiency, or at what social costs, at this stage of development in the silk industry.[131] It is therefore unrealistic to presume that the status quo impeded firms from exploiting their growth potential, so long as they were enterprising, competitive on price and quality, and forward-looking. From this perspective, the notion that the vestiopratai were in an inferior position seems untenable.

Imported Silks. The prandiopratai specialized in the wholesale import and retail sale of an impressive array of silks from Syria, Seleucia, and other regions (V.1, 2). Imported silks had to be stored and traded in one of the *mitata* (V.2). As in the case of imported raw silk, at the time of the market, all guild members, as well as Syrian merchants who had domiciled in the capital for at least ten years,[132] contributed according to their means to a fund for the collective purchase of the imported silks (V.2, 3). This mandated quasi-monopsony aimed to secure the lowest possible prices, although it is unlikely that the monopsonistic buying power of the prandiopratai always remained unchallenged.[133] Noblemen and other dignitaries were allowed to make purchases directly from the foreign merchants but only to satisfy their personal needs (V.4). The prandiopratai were obligated to buy the entire lot of silks of Syrian origin offered for sale during the market day, irrespective of makeup, quantity, or sizes (V.4). Foreign suppliers had up to three months to complete the sale of their merchandise.[134] Syrian silks unsold by then had to be reported to the chief of the guild, who undertook his best effort to dispose of them (V.5). Ostensibly, the chief took it upon himself to find a market for the unsold silks, in the interest of maintaining a constant flow of luxury items for the upper class; but more

[131] See pp. 287–88, 320–22.

[132] Local Syrian merchants were allowed to trade but not to become members of the guild of prandiopratai: Stöckle, *Byzantinische Zünfte,* 118; Christophilopoulos, Ἐπαρχικὸν Βιβλίον, 82 and n. 4; Zoras, *Corporazioni bizantine,* 79–80.

[133] See note 134 and pp. 305–10, below.

[134] The implication is that external suppliers of silks were not obligated to sell their wares on arrival *en bloc.* This enabled them to get a feel for the market, space out the quantities offered for sale over several market days, and increase their chances of obtaining higher prices.

subtle policy aims were to sustain the raw silk supply from Syria[135] and to keep the pressure on local producers to ensure high quality of output and competitive prices.

The *Book of the Eparch* does not indicate who represented the guild in the negotiations, or the mode in which the transactions were conducted. Mickwitz believes that negotiation must have been the chief's responsibility,[136] but this need not be so, especially if the chief lacked commercial experience or bargaining skills. Also, it is not known whether the representative(s) of the prandiopratai negotiated with the suppliers on a one-to-one basis, set the price for the entire consignment, or solicited quotations. The manner in which the transactions were carried out, as well as the extent of the suppliers' bargaining power, could well influence the price-setting ability of the prandiopratai.[137]

The imported silks were not standard products but encompassed a range of highly differentiated luxury articles of varied type, value, and marketability. After the purchase, the silks were allocated by the chief in proportion to the respective contributions of the participants (V.3). While dignitaries could pick and choose pre-emptively, the prandiopratai had no such choices. However, it is unlikely that the use of allotment in lieu of the market mechanism satisfied individual buyers' preferences and commercial interests at all times. Because the formula employed was crude, the system must have posed nagging problems of fairness for the participants.[138] Lower cost due to the exercise of monopsonistic buying power for a collection of silks of unknown mix and quality did not necessarily amount to a real gain for the individual buyer, especially since suppliers may have wielded a measure of countervailing power. It is simplistic to infer, as Mickwitz does, that individual buyers were not pressured, and that low cost reflected the monopsony gain and the workability of the system.[139] The rough-and-ready allocative formula violated the buyer merchant's "sovereignty," in the sense that he could not necessarily obtain the particular assortment of silks he thought would make the best profit on and he may also have been forced to pay prices well exceeding the going market value for silks he unwillingly acquired.

Although the prandiopratai were enjoined from practicing the trade of vestiopratai (V.1, XVIII.5), as mentioned earlier, it has been asserted that they encroached on the prerogatives of the vestiopratai in defiance of the law.[140] However, this action would have entailed collusion with the serikarioi as the sole suppliers of domestically produced silks, and they were not likely to have been forthcoming. Aside from the risk of detection, the serikarioi had a legitimate outlet for their production through the vestiopratai and silk merchants, foreign and provincial. Involvement of the prandiopratai was not likely to result in a measurable increase in sales, this assuming the serikarioi had difficulty in

[135] Muthesius, "Silk, Power and Diplomacy," 240. Other reasons advanced for this concession are reciprocity (Stöckle, *Byzantinische Zünfte,* 117 ff) and sharing the 10% sales tax with the rulers of Aleppo (Lopez, "Silk Industry," 31). On the other hand, there is no evidence that the importation of silks was ever regulated or subjected to strict controls in order to stem the outflow of gold from the Empire, as Muthesius speculates: "Byzantine Silk Industry," 67.

[136] *Kartellfunktionen,* 210.

[137] See below, pp. 305–10.

[138] A more equitable method of allocation consistent with the buyers' preferences would have been to auction the silks after the collective purchase.

[139] *Kartellfunktionen,* 210–11.

[140] Lopez, "Silk Industry," 19–20. See also above, p. 297.

selling accumulated stocks through lawful channels. Lopez is unwarrantedly dismissive of the importance of the *Book of the Eparch* as a policy instrument and of the eparch's will to enforce the statute, while he overstates the ability of the prandiopratai to remain above the law. Moreover, the rightful reaction to such transgressions by the guild of the vestiopratai with vital interests at stake is conveniently overlooked.[141]

Market Structure and Modus Operandi

The mandated functional division of the private silk industry's operations led to market fragmentation, with different structures displaying varied enterprise behavioral patterns and modes of operation. The following commodity markets and their respective subdivisions can be distinguished: 1) the silk raw materials market, comprising the provincial cocoon, the import cocoon/raw silk, and the domestic cocoon/raw silk markets; 2) the two-tier yarn market, reflecting the intermediation of the metaxopratai in the yarn trade, which encompassed the yarn producer-trader and trader-cloth producer stages; and 3) the silk fabrics market, subdivided into wholesale and retail distribution segments. Based on this typology, an attempt is made in the next sections to identify the constituent elements of these diverse market structures, ascertain plausible patterns of market conduct by the different sets of sellers and buyers involved, and outline the most likely pricing policy decisions and performance outcomes.

The Silk Raw Materials Market

The Provincial Cocoon Markets. Silk was an expensive raw material that had to be shipped from production centers to the capital at a high transport cost and marketed there wholesale in unprocessed or semi-processed form. In addition, market uncertainties, spoilage, and unsafe transport,[142] conditions inherent in distant trade, rendered the enterprise risky. Such venturesome commercial undertakings therefore made heavy demands on financial resources, organizational ability, and marketing skills, and the merchants involved in the purchase and shipping of the cocoons had to be enterprising, resourceful, and persons of means.[143] Consequently, there were few in each locality, a situation that is suggestive of a relatively high buyer concentration. On the other hand, cocoon producers were, by and large, numerous and small, and at a distinct disadvantage because it was prohibitive, if feasible at all, to carry their produce to the capital and dispose of it themselves, and unprofitable to have it shipped and sold on consignment. Nor could they withhold their produce from the market for a long time, as it was liable to spoilage. Moreover, although the income from cocoons was supplementary, sericulture was an important cash crop for the families concerned and the need for this extra money put pressure on the producers to sell quickly, adding to their vulnerability. All in all, producers had no alternative but to sell hurriedly to the dominant local merchant(s) and on the latter's terms.[144]

[141] See above, pp. 273–74.

[142] Storms, piracy, and uncharted seas placed too many risks in the way of maritime trade.

[143] This lot may have included enterprising landowners as well.

[144] Conceivably, they could sell to a larger local producer, but it is unlikely that this would have changed materially their negotiating position.

In those rare instances where individual producers dealt with a relatively large number of merchants, for example, in a large town or at a trade fair, they could dispose of their cocoons under more competitive conditions and fetch higher prices.[145] More often than not, however, producers had no option but to sell to the local merchant(s) and probably to a merchant to whom they were already in debt. Producers borrowed money or made purchases of consumer goods, agricultural implements, or building materials on credit, pledging their upcoming cocoon crop in repayment, at times at a pre-fixed price. Under these circumstances, and particularly if they counted on the same merchant to obtain new credit, producers had limited, if any, bargaining power and were inclined to accept a price below the going market level. In short, limited storability, limited market outlets, debt repayment obligations, the immediate need for cash, and insufficient knowledge of distant market conditions rendered small and unsophisticated producers vulnerable and enabled the buying merchants to dictate prices.

On the other hand, cocoon merchants were in most instances able either to set the price at which they were prepared to buy or to negotiate from a position of strength. They could influence prices because they were few in number and bought in large quantities. By restricting their purchases or threatening to do so, they could force producers to accept a lower price or better bargain.[146] Concentrated buying and the attendant market power gave rise to market structures leading to diverse price-setting behaviors.[147]

In the case of a simple monopsony, in which a single buyer of cocoons is competitively supplied by many small sellers, the monopsonist sets a single market price and buys all the produce offered at that price.[148] By exercising his monopsony power, the monopsonist is able to pay the producers a price lower than the competitive price under the same conditions of demand,[149] realizing excess profits. In the event that the monopsonist is threatened by potential new entrant(s), he may be led to temper his monopsony power to forestall the new entry. He may then set a price higher than he otherwise would, deter entry, and have the smaller excess profit all to himself.

[145]As sellers face buyers' demand curves, so buyers face the sellers' supply curves. In an atomistic market structure, in which there are many buyers of a homogeneous product (see note 186) and no one buys a significant proportion of the total output offered, buyers necessarily, because they are unable to exert perceptible influence on price, accept as given the going market price as determined by the aggregate demand and supply. In technical terms, to the small buyer the supply curve is perfectly elastic (horizontal) at the prevailing market price, regardless of the shape of the aggregate supply curve. Below this price he is unable to make any purchases, while it is not in his interest to pay a higher price.

[146]In concentrated, i.e., monopolistic or oligopolistic, markets, the supply curve buyers face when they purchase from many small sellers will slope upward, being elastic and possibly inelastic, reflecting the fact that sellers are willing to take various prices the buyers may set, supplying more (less) of the good at increased (decreased) buying prices. If a seller's supply curve is perfectly inelastic (vertical), as when he has no alternative but to dispose of his produce without delay, the intensity of the buyer's demand alone will determine the prevailing price.

[147]Large size *per se*, whether measured by the number of workers employed, assets in command, or turnover, does not necessarily imply the ability of a firm to exercise monopoly or monopsony power. For instance, a small firm by any standard that operates uncontested in an isolated area can effectively exercise monopoly or monopsony power. It is the unavailability of close substitutes, impeded new entry, legal concessions to a single firm, control over a strategic input, or effective exercise of concerted action by dominant firms that lead to market control—in short, the absence of competition.

[148]By offering a lower price, the monopsonist will not lose his entire source of supply because the sellers' supply curves slope upward (see note 146).

[149]See also below, pp. 308–9 and note 172, and Figure 2 for a diagrammatic presentation of the argument.

A variant of the simple monopsony is perfect monopsonistic price discrimination, in which the monopsonist deals with the sellers one at a time, strikes a potentially different bargain with each one of them, and makes all-or-nothing offers.[150] By exploiting each individual producer's particular circumstances, which are usually common knowledge in small localities, the monopsonist is able to purchase the entire quantity of cocoons being offered at the minimum average supply price. This price would be lower than that established under a simple monopsony and would enable the monopsonist to enhance his excess profits.[151] Nevertheless, for practical reasons, perfect discrimination is achievable only when the monopsonist deals with a limited number of sellers. Also, it may not be in the monopsonist's long-term interest to follow an aggressive pricing policy that could alienate many producers and force them to discontinue production. In such instances, the force of monopsonistic buying power is attenuated, and higher purchasing prices are likely to prevail, albeit still below competitive levels.

Another form of concentrated market structure—and one perhaps more likely to pertain to our current study—is oligopsony. It may encompass situations in which very few large buyers are supplied competitively by many small producers or in which a few large buyers coexist with a limited number of smaller buyers. In either case, price-output determination would tend to be dominated by the recognized interdependence and rivalry of the large buyers, whose pricing policies would likely set the policy parameters for the group as a whole. However, since oligopsonists must assume that any price change they make will elicit retaliatory or compensatory price changes by their rivals—with uncertain outcomes—independent pricing or active rivalry may not be enticing. Oligopsonists may then be amenable to settling on some determinate and mutually satisfactory price. It is, however, by no means certain that they will do so, because in an oligopsonistic (oligopolistic) setting two antithetic attitudes tend to vitiate such a decision.

Common interest in maximizing the joint monopsony profit would induce larger buyers to act jointly or collusively, a motivation strongest when there are few dominant buyers. Such concurrent or collusive pricing action can be accomplished either by express agreement or by price leadership. In the latter case, through a tacit agreement or unspoken understanding, one of the larger buyers takes the lead, setting a low buying price that the others follow closely.[152] Price leadership is more likely to occur in oligopsonies (oligopolies) dealing with a homogeneous product, such as cocoons and raw silk, because market shares shift drastically in response to price changes and affect all members of the group. Where collusive oligopsony is successful, as it could have been in the provinces,[153] the impact on the price producers receive is similar to that of a simple monopsony.[154] To the extent, however, that rivalry develops within the oligopsonistic camp with respect to the buying price, as when a large buyer bids a price above the monopsony level to secure added supplies at the expense of his competitors, the outcome would tend to shift away

[150] For instance, the monopsonist would be in a position to make an all-or-nothing offer when small producers were his debtors or had no other option than to dispose of their produce.

[151] See also below, pp. 309–10 and note 173, and Figure 3 for a diagrammatic presentation of the two outcomes.

[152] The idea is that the price leader will direct the price to the most advantageous level and that the market will be shared by all at a single price.

[153] See note 190.

[154] Figure 2 indicates that the price paid to the producers will be OP_m.

from the monopsonistic and toward the competitive, and price would be indeterminate within a considerable range. Threat of new entry would have the same effect and reinforce the process. Therefore, inter-buyer rivalry and low or nonexistent entry barriers (i.e., insignificant advantages for established firms over potential entrants) would tend to push buying prices higher than under a simple monopsony, and to the producers' benefit.[155]

In view of these conflicting tendencies, it is not possible in an oligopsony to discern a unique pattern of pricing policy. The uncertainty regarding the likely course of monopsonistic buying behavior makes it impossible to ascertain where the balance among these conflicting forces will be struck. There is a distinct possibility, in this instance, that the short trading period narrowed the window of opportunity and imposed a definite limit on the oligopsonists' posturing, making them less intransigent and more disposed to reach a negotiated price level—more so at times of poor harvests—rather than to follow an uncharted course of action. Such a stance would result in a rigid but determinate price that can fall anywhere between monopsonistic and competitive limits.

In the event that in a local market the number of both buyers and sellers was small, as when a few large producers supplying the bulk of the market were not dependent on merchants for the marketing of their produce, an oligopoly *cum* oligopsony situation would emerge, appropriately referred to as bilateral oligopoly. In this instance, impersonal market forces are totally absent, as both sides command and exercise substantial market power, resulting in an indeterminate market price. The final outcome depends on bargaining strength, maneuvering skills, or competitive price rivalry, and the price could vacillate within wide limits.[156]

The Import Cocoon/Raw Silk Market: Strengths and Weaknesses of the Competing Groups. Historians have maintained that the metaxopratai acted as a "cartel" in purchasing the silk brought into the capital by external suppliers, the implication being that in this way they were able to influence the terms of exchange to their own advantage and to strike deals at much lower prices than if each guild member negotiated individually.[157] To be sure, the mandated collective purchase effectively created a quasi-monopsony, which was reinforced by restrictions limiting the maneuverability of the suppliers: by obligating them to sell in a designated and narrowly defined marketplace (the *mitata*) and on scheduled market days,[158] forcing them to negotiate only with the guild's representative(s), and lim-

[155] Figure 2 shows that the price will settle between OP_m and OP_c.

[156] The case of bilateral oligopoly can be conveniently subsumed under the case of bilateral monopoly because the results are similar. See the discussion below, pp. 307–8 and note 170, and Figure 1 for a diagrammatic presentation.

[157] Mickwitz, *Kartellfunktionen,* 211; Christophilopoulos, Ἐπαρχικὸν Βιβλίον, 58–59; Lopez, "Silk Industry," 14; R. S. Lopez and I. W. Raymond, *Medieval Trade in the Mediterranean World* (New York, 1955), 126; Muthesius, "Byzantine Silk Industry," 34 and 36. The inference is based on provision VI.8 of the *Book of the Eparch,* which enjoins the guild members to contribute to a fund to effect collectively the purchase of the imported cocoons and raw silk.

[158] It is not known whether cocoon/raw silk transactions in the *mitata* were taking place on pre-fixed days or if the frequency of market days was determined by the eparch at his discretion and in the light of current circumstances. For practical reasons, it is doubtful that deals were made even weekly. The nature of the trade, the institutional setup, and expediency must have had a bearing on the frequency of market days. Distant points of origin, mode of transport, weather conditions, and the seasonality of shipments were not conducive to fixed scheduling. Collection of advance information about quantities offered for sale and in-

iting their stay in the capital. The eparch's prerogative to postpone opening the market when it was thin could also work to the advantage of the metaxopratai by augmenting the available supply through increased participation, while a prolonged stay would raise the carrying costs of the suppliers and cut into their profitability by decreasing stock turnover.

Still, the bargaining power of the metaxopratai in these wholesale transactions was not unalloyed, as has been presumed. The market position of the external suppliers, as defined by their number, size, and attendant behavioral patterns, would also have to be taken into consideration in assessing the effective monopsony power of the metaxopratai. The high-price, high-volume character of the trade and the risks involved very likely limited the number of suppliers that entered the marketplace each time, suggesting that each cohort of suppliers comprised a core of fairly large merchants and possibly a fringe of smaller ones. The confluence of a small number of sizable suppliers, an array of potent factors affecting the demand/supply relation (e.g., excess demand, supply shortages, absence of substitutes, seasonality of shipments), and the sophistication and bargaining skills of seasoned suppliers could effectively mitigate, if not countervail, the market dominance of the metaxopratai. Furthermore, by timing their entry into the market, staggering the quantities offered for sale over several market days, or withdrawing part or all of their wares when prices were depressed, suppliers could perceptibly enhance their bargaining power. Opportunity to act in concert or re-export their wares could have a similar effect. Finally, import dependence and the legitimate concern that the exercise of inordinate monopsonistic leverage might result in unprofitable sales and disrupt the regular flow of silk imports in the longer run, for example, through a decline in domestic production or a shift of shipments to rival manufacturing centers, could further ease the pressure on suppliers.[159]

These remarks clearly suggest that the suppliers of raw silk were not inescapably trapped or constantly at the mercy of the metaxopratai and that the latter's alleged overwhelming monopsonistic buying power could be readily reined in under a special set of circumstances. The effectiveness and assertive power of the contesting groups, as determined by their respective strengths and weaknesses and the manner in which the transactions were conducted in the *mitata,* defined different market structures, varying modes of operation, and varying levels of competitiveness that led, in turn, to diverse patterns

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tended to be purchased during the upcoming market day, needed by the metaxopratai so they could make deposits to the fund, invite katartarioi to join if necessary, and allow the latter time to prove their eligibility to the eparch, was time-consuming. That the metaxopratai allowed time for the arrival of additional traders and the accumulation of larger supplies in the hope of lowering the buying price cannot be ruled out. The confluence of these factors suggests that market days were probably fixed at regular intervals, say once a fortnight with a carry-over to the next day to complete unfinished business, but that the eparch, in consideration of particular circumstances, could postpone or interpolate market days. The fairly long time (three months) foreign merchants were allowed to stay in the capital reinforces this view. And so does provision X.2 of the *Book of the Eparch,* which stipulates that the dealers in perfumes shall buy the imported articles of their trade on the appointed days (καθὼς ἂν ἡ ἡμέρα τὴν ὠνὴν ἔχῃ τοῦ εἴδους). The eparch's staff would notify the guild members through their chiefs and the external suppliers who stayed in the *mitata* of the set market day.

[159]To be sure, forward planning can hardly be expected, let alone be implemented, by buyers acting individually. However, when buyers act collectivelly, it is very likely that long-range issues affecting them as a group will come to the forefront and possibly be acted upon.

of pricing behavior. Furthermore, elusive and ever-changing market conditions placed a high premium on the contestants' agility, circumspection, and positioning. It would seem therefore that the price imported silk ultimately fetched could not be fixed unilaterally by the metaxopratai, certainly not with the ubiquity that the notion of a cartel seems to imply, since price concessions extracted on each market day from external suppliers could vary appreciably and sometimes could even be negated.

The Import Cocoon/Raw Silk Market: Organization and Management of Transactions. Intriguing questions of operational significance can be raised concerning the manner in which business transactions were organized and conducted. Regarding the metaxopratai, there is no information about who designated the person(s) responsible for making purchases on behalf of the guild: the chiefs[160] or the membership? Were the chiefs *ex officio* the only authorized persons to be actively involved in the negotiations or were they titular bystanders? Did the chiefs share this responsibility with guild members, forming a committee for deliberation and decision-making?[161] If so, by what criteria were these persons selected: buying experience,[162] bargaining skills, contribution to the fund, rotation? Were all committee members actively involved in deal-making, or was one (or more) spokesman designated? Were the designated representative(s) fully authorized to consummate deals, or did they have to consult with and obtain the consent of the committee? How were the decisions made in case of disagreement among members? For instance, reserve prices (i.e., maximum buying prices above which demand becomes ineffective) may have differed substantially among committee members, and timidity or boldness could have affected appreciably the closing price and, by extension, the interests of the entire guild membership. To what extent was market intelligence regarding the volume of the collective demand for raw silk compiled, so as to enable the delegate(s) of the metaxopratai to exercise more effectively the mandated purchase monopsony?[163] Were all suppliers treated alike, regardless of their ethnic origin during the negotiations, or were separate and more favorable deals negotiated with native merchants?[164] Did the guild's representa-

[160]Apparently, because of its large membership, the guild of metaxopratai had more than one chief of high ranking in the Byzantine administrative hierarchy (ἔξαρχος), although the *Book of the Eparch* does not specify how many (VI.4). Since the law explicitly indicates that the guild of the prandiopratai was to be overseen by one chief and the guild of metaxopratai by more than one, it is not unlikely that the remaining guilds in the silk industry, on which the *Book of the Prefect* is silent, also had more than one chief, especially in view of their large membership since guilds in other industries with numerous members did (XVI.3, XVII.4, XIX.1).

[161]For instance, Macri believes that a delegation was authorized to make the purchases: *Économie urbaine,* 64.

[162]The quality of the silk is affected by the color, size, shape, and texture of the cocoons. There is a material difference in quality between cultivated silk, which is a narrow fiber with no markings, and wild silk, which is coarser and thicker with markings. The skill with which the reeling has been done also affects the silk's quality. Further, silk is hygroscopic and can retain as much as one-third of its weight in moisture without any change in appearance or feel. In addition, cocoons and reeled silk could be soiled or damaged during transport. As a high-value raw material, stifled cocoons and reeled silk had to be sorted, graded, and all the elements affecting quality and weight had to be scrutinized at the time of the purchase by knowledgeable persons to detect blemishes and foil deceptive practices. Probably, the screening and grading were performed prior to negotiations by melathrarioi, who in turn bought the blemished raw silk (see above, pp. 281–82).

[163]See above, p. 290 and note 101.

[164]The authorities were anxious to ensure a constant flow of raw silk into the capital from all places and at the lowest possible price. The fact that imports of raw silk were tax exempt (VI.5) suggests a rather significant dependence on external supplies and, possibly, an indirect incentive to stimulate domestic pro-

tive(s) deal on an individual basis with each supplier, or did they negotiate with their representatives? If the latter, were the representatives designated at the request of the authorities, or on the suppliers' initiative?[165] Were quotations solicited from individual suppliers, or was a price set for the entire lot? Was the set price final ("take it or leave it"), or were the suppliers allowed to counter-offer, setting in motion a bargaining process? Evidently, the mindset of the metaxopratai as a group, the approach taken in dealing with these matters, and the suppliers' reaction affected the decision-making process and the determination of the price paid.

Similar questions can be raised with respect to the external suppliers. Could they somehow group together and act in concert as a defensive move against the collectively acting metaxopratai? Obviously, they had legitimate cause to try to neutralize the buyers' advantage, adequate time to do so, and opportunity, as their stay in the *mitata* facilitated the exchange of information, collective assessment of market conditions, and development of a business strategy with fellow traders. Circumstances and personal acquaintances, as some traders came from the same region, if not the same town, or had met during previous journeys, could help forge mutual trust and alliances—all conducive to effective concerted action. The chance to develop a common position through cooperative schemes was further enhanced because the number of suppliers was probably not particularly large. They were, moreover, bound by common interest and had some room to maneuver. The fact that the suppliers were allowed to remain in the capital up to three months suggests that they were not obligated to dispose of their wares immediately on arrival and could instead enter the market at their own pace.[166] Possibly an encumbrance, largely because within this time span merchants had also to complete deals for return cargo, the ruling nonetheless allowed a degree of flexibility in timing their sales and conduct of their affairs. Also, suppliers apparently had the option, as a last resort, to re-export unsold raw silk to other manufacturing centers—certainly not a preferred alternative to either party because of adverse economic repercussions.[167] In sum, different

duction, albeit with an uncertain impact on producer prices due to the considerable market power of the intermediating merchants, who were not compelled to pass on the savings from the waived tax to producers. Price discrimination against foreign suppliers based on ethnicity, although technically feasible, since sellers could be segregated in the *mitata* and dealt with separately, could have proven to be myopic and counterproductive in the long run, as shipments could be diverted to other manufacturing centers in the East, such as Seleucia, Antioch, or Alexandria, resulting in shortages and price increases. It would therefore appear that, as long as the silk industry relied on foreign supplies and the threat of diminished shipments to the capital was real, ethnic discrimination and differential pricing could not be practiced with impunity. See also notes 159 and 167.

[165]This would expedite the negotiating process by reducing the number of one-to-one contacts. However, the hemming in of the suppliers could potentially enhance their bargaining power by facilitating concerted action, e.g., price leadership.

[166]It is unlikely that provision XX.3 of the *Book of the Eparch,* which stipulates that merchants hoarding imported goods in times of scarcity shall be severely punished and have their goods confiscated, was applicable to external suppliers of raw silk. Rather, the provision was meant to apply to local merchants handling imported necessities and medicines that affected the public at large (XIII.4, X.2), not to dealers of a raw material intended for the production of luxuries whose scarcity had no real impact on the masses. Besides, hoarding implies that supplies are hidden, whereas the quantities of raw silk stored in the *mitata* were known to the authorities and their storage temporary.

[167]In the case of the Syrian external suppliers, the *Book of the Eparch* makes it clear that, if part of the imported silks remained unsold at the end of the three months, the chief of the guild of prandiopratai was to make his best effort to see to their disposal (V.5). In the absence of an explicit provision, we cannot

factors could produce downward adjustments in the quantities offered on the market day and thereby enhance the suppliers' bargaining power.

Concerted action could take the form of an express or tacit collusive agreement and require the participation of a limited number of relatively large suppliers who controlled a substantial proportion of the raw silk offered for sale. In an overt or sub rosa agreement, a price floor would be set below which suppliers would refuse to sell. Under a tacit agreement, the unified group of suppliers would recognize and follow a price leader who would take the initiative to set the initial price and whose subsequent price changes would be matched by the other sellers. In theory, suppliers resorting to collusive behavior could have been indicted for violating the general provision of the *Book of the Eparch* (XX.3), whereby persons conducting business in a manner detrimental to the public interest were to be punished and have their wares confiscated, or the existing anti-monopoly legislation.[168] It is debatable, however, whether such overt or covert actions could be detected, proven, or effectively litigated, even if these legal strictures applied, which is doubtful. Ironically, prosecutorial action could raise the issue of fairness in commercial circles, with possible adverse implications for trade, since concerted action by the metaxopratai was officially mandated and sanctioned, while counteractive actions by aggrieved suppliers were impeachable.

These observations clearly suggest that, as a result of changing market conditions, varying degrees of supplier concentration, and supplier bargaining power, the monopsonistic pricing power of the metaxopratai, though present, was not unbridled. Its final impact cannot be determined without an analysis of surrounding circumstances. As monopsonistic attitude entails different patterns of pricing behavior in response to market dynamics and seller reaction, likely price outcomes and their viability are explored below by considering three plausible market structures: bilateral monopoly, simple monopsony, and monopsonistic price discrimination.

The Import Cocoon/Raw Silk Market: Market Structures and Behavioral Patterns. Effectively, whenever the external suppliers of raw silk succeeded in banding together and forming

conclude that, by analogy, the same held for imports of cocoons and raw silk as well, because they do not lend themselves to the same handling as silk fabrics, and, in addition, such a concession would discriminate against domestic producers and other foreign suppliers. About the reasons for this concession see above, pp. 298–99 and note 135. Goitein reports that there is no indication from the Geniza records in Cairo that raw silk was traded outside the frontiers of the empire: *A Mediterranean Society,* 1:103. A. Guillou, on the other hand, maintains that part of the Calabrian raw silk production was exported to Cairo: "Production and Profits in the Byzantine Province of Italy (Tenth to Eleventh Centuries): An Expanding Society," *DOP* 28 (1974): 94. In fact, there is no evidence of legal restrictions on raw silk being shipped outside the empire or of stipulations mandating that the only port of destination for domestic producers was the capital. For instance, Byzantine Calabria exported cocoons and raw silk to Arab Sicily: A. Guillou, "La Soie sicilienne au X^{e}–XI^{e} s.," in *Bizantino-Sicula,* 2: *Miscellanea di Scritti in Memoria di Giuseppe Rossi Taibbi* (Palermo, 1975), 287. Exportation of raw silk from the capital was explicitly prohibited only after it had been purchased by the metaxopratai for the reasons mentioned above, p. 269. Evidently, the authorities were convinced that policing would be ineffective, and only market forces could determine the direction of trade in raw silk. If shipments of raw silk converged on the capital, the primary reason was that the demand was strong and traders were confident that they would not be squeezed and that they would obtain a fair price. This suggests that the metaxopratai took pains to avoid aggressive monopsonistic pricing that would force suppliers to exit the market or divert shipments.

[168] See note 190.

a quasi-monopoly to confront the quasi-monopsony of unified buyers, a market structure referred to as bilateral monopoly would emerge. In this situation, the interests of buyers and sellers are diametrically opposed and in sharp conflict. The monopsonistic group of metaxopratai would have wanted to pay the lowest possible average price, or just enough to cover the suppliers' average cost per unit,[169] keep them in business, and ensure their return to the market. The monopolistic group of suppliers, for their part, would have wanted to charge the highest possible average price for the units sold, or just enough to prevent the buyers from leaving the market. To achieve their respective objectives, both groups would have attempted to drive an all-or-nothing bargain for the marketed quantity of the raw silk at a specified average price. However, since both groups exercised control over price, the market price mechanism was not operative and the price at which this quantity changed hands was indeterminate within a wide range. Bargaining power and negotiating skills determined the outcome. Buyer dominance, seller dominance, or balanced power were all possible, and the price could therefore fall within the extreme limit of either group, whichever was dominant, or fall uncertainly between the two extremes. If neither group dominated, there was a good chance that the price gravitated toward competitive levels.[170]

A market structure referred to as a simple monopsony arose when the metaxopratai, acting as a single buyer, were supplied competitively by many sellers. Assuming that the

[169]Average cost includes the minimal profit necessary to induce the seller to continue in operation.

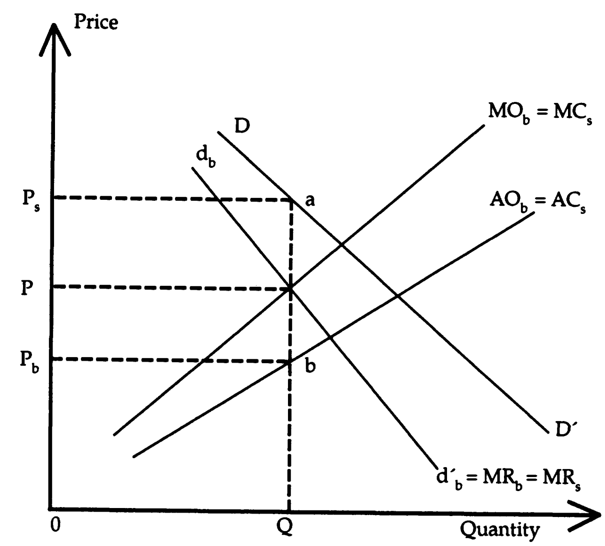
[170]In Figure 1, the unified monopsonistic buyers have a tentative demand curve (dd_b') in the import market, because they can set a buying price and not offer to buy various amounts at different prices as happens in conventional demand curves. Only if they had no control over price would this be a genuine demand curve. Each price shown on dd_b' simply represents the net value to the monopsonistic group of an increment to their purchases of raw silk at the corresponding quantity. Since the monopsonistic group resells the purchased raw silk, dd_b' also represents their marginal revenue curve (MR_b) derived from the demand curve DD' they face in the resale market. However, the unified monopsonists' demand curve dd_b' (MR_b) is, in effect, the unified monopolistic sellers' marginal revenue curve (MR_s), reflecting the additions to their revenue from incremental sales. Similarly the monopsonistic buyers' average outlay (AO_b) and marginal outlay (MO_b) curves are also the monopolistic sellers' average cost (AC_s) and marginal cost (MC_s), respectively.

It is evident that both groups will wish to drive a perfectly discriminatory, i.e., an all-or-nothing, bargain. To do this, the monopsonistic buyers will purchase that quantity OQ at which their marginal revenue curve intersects their marginal outlay curve ($MR_b = MO_b$). They will wish to pay OP for the last unit, but lower prices for all preceding units they buy, and an average price OP_b for all units. By reselling this quantity at OP_s (as found on the demand curve DD' for their sales), they will reap a combined profit (selling price minus average cost), as shown by the rectangle abP_bP_s.

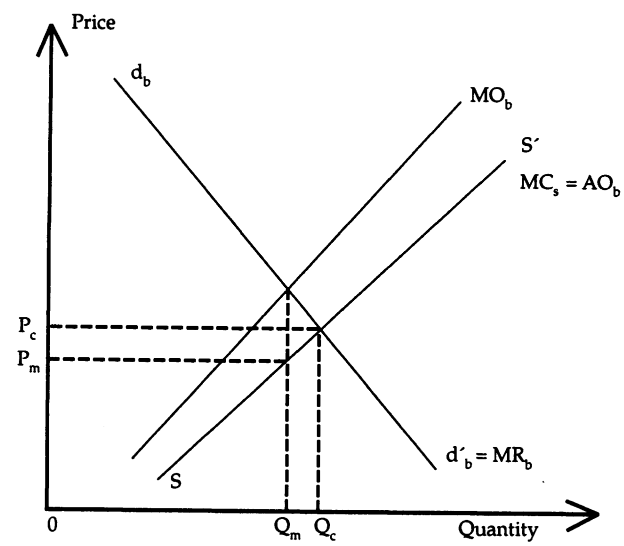
The monopolistic sellers will sell that quantity at which their marginal cost equals their marginal revenue ($MC_s = MR_s$), which is the same quantity OQ desired by the monopsonistic buyers. They will wish to sell the last unit at OP but all preceding units at higher prices, receiving an average selling price OP_s for the quantity OQ, appropriating the total available revenue of the buyers to themselves. So, when the raw silk is resold at OP_s, the monopsonistic sellers will reap the total profit abP_bP_s.

This sets the stage for bargaining. Both contesting groups have an interest in the same quantity of raw silk, which is such as to maximize their joint profits. But they disagree over the average price at which the raw silk will pass from sellers to buyers. This average price cannot go above OP_s or below OP_b but is indeterminate between these limits that define the bargaining range. Depending on their relative bargaining strength, the price may fall anywhere between OP_b and OP_s.

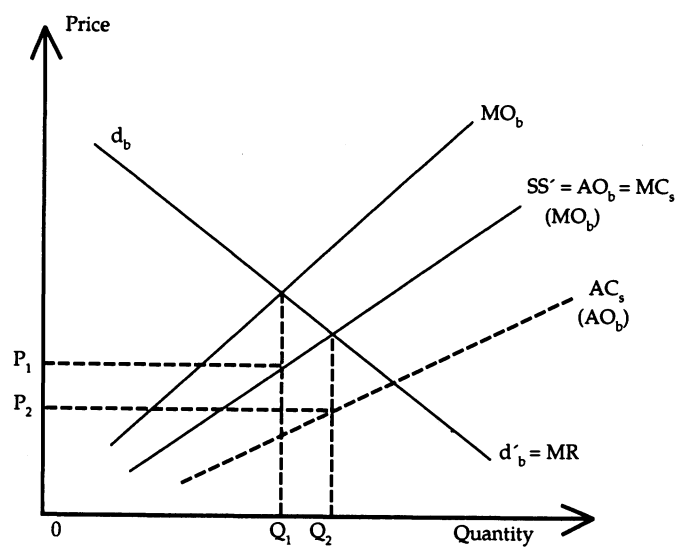
For an in-depth analysis of the theoretical underpinning of the participants' pricing behavior under bilateral monopoly, see J. S. Bain, *Pricing, Distribution and Employment* (New York, 1953), 394–96, and 432–36; E. Schneider, *Pricing and Equilibrium* (London, 1962), 299–313; W. J. L. Ryan, *Price Theory* (London, 1964), 353–62; C. E. Ferguson, *Microeconomic Theory* (Homewood, Ill., 1969), 281–82; E. Mansfield, *Microeconomics: Theory and Applications* (New York, 1970), 270–72.



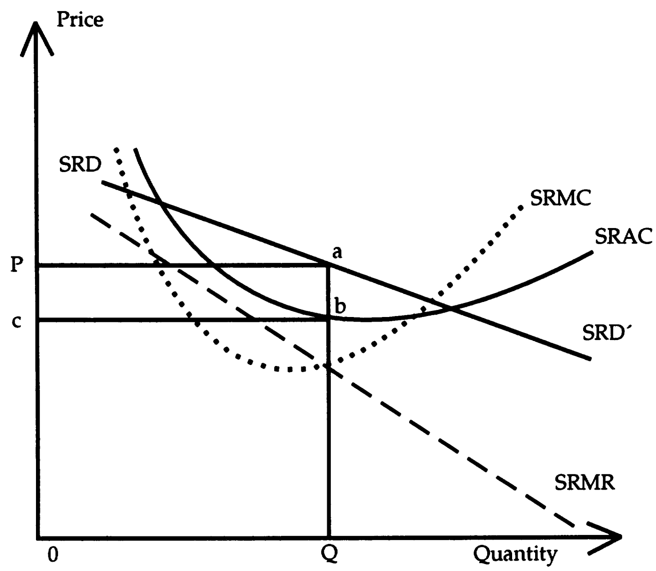
1 Bilateral monopoly



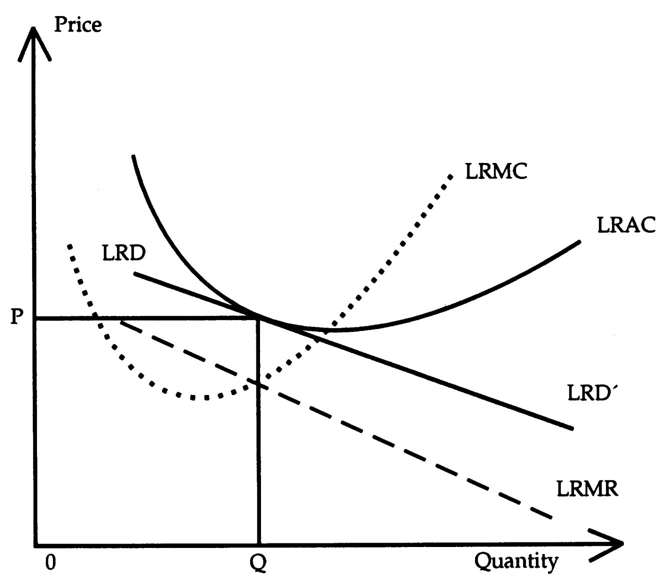
2 Simple monopsony



3 Perfect monopsonistic price discrimination



4 Monopolistic competition, short run



5 Monopolistic competition, long run

monopsonistic buyers could not discriminate in buying price,[171] they would have set a single market price depending on their room for maneuver and accepted all the raw silk offered for sale at that price. The effect of this action would have been that the monopsonistic buyers paid the sellers a lower price than competitive buyers under the same conditions of demand.[172] In the absence of a prevailing countervening power or under conditions of excess supply, the chances that a monopsonistic pricing policy would be exercised effectively were enhanced. Yet, the force of the exercisable monopsonistic power could be tempered measurably if such action militated against the collective self-interest of the metaxopratai, as it would have in the face of concern that it would lead to a disruption of the regular flow of imports. A paucity of suppliers or excess demand, factors that tend to bolster the bargaining power of sellers, also could have a mitigating effect on the monopsonists' buying pricing power.

Perfect monopsonistic price discrimination occurred when the metaxopratai, acting together as a single monopsonist, dealt with each seller (or a group of sellers) individually and made an all-or-nothing offer. Unlike the case of simple monopsony where a unit price was set at which each seller could supply as much as he wished, perfect price discrimination specified the quantity to be purchased from each seller (or set of sellers) and the total outlay. The resulting price tended to be the minimum each seller would be willing to accept rather than leave the market. The quasi-monopsonistic buyers were then able to buy raw silk at a supply price lower than that established under simple monopsony. Perfect price discrimination therefore entails maximum exploitation of each seller, as the monopsonistic buyers, by acting in unison, are in a position to dictate the price they want, capitalizing on individual supply conditions and arrogating a take-it-or-leave-it posture.[173] The extent to which perfect price discrimination actually occurs,

[171] That is, buying some units at a low price and further units at a higher price without raising the price of the previous units.

[172] In Figure 2, dd_b' is the unified monopsonistic buyers' tentative demand curve as well as their marginal revenue curve (MR_b) from the resale of the raw silk, as discussed in note 170. SS' is the supply curve of raw silk, or the summed marginal cost curves of the sellers (MC_s). In the absence of control over price, this is a conventional supply curve in atomistic competition. The marginal outlay curve (MO_b), drawn to the supply curve, shows the rate of increase of the monopsonistic buyers' total outlay with increases in purchases. Upward supply curves, as is reasonable to expect, denote that by increasing their purchases the monopsonistic buyers raise their total outlay steeply because they must pay a higher price for all intra-marginal units. Thus, the marginal outlay to them is greater than the supply price that represents their average cost or outlay (AO_b).

To maximize their profit on raw silk operations, the monopsonistic buyers will purchase such a quantity that their marginal outlay (MO_b) just equals their marginal revenue ($dd_b' = MR_b$). This will be the quantity OQ_m, for which the monopsonistic buyers will pay the uniform price OP_m per unit. If dd_b' was a genuine demand curve, i.e., the aggregate demand curve of many small buyers or, alternatively, if the monopsonistic buyers did not exercise their monopsony power, the intersection of SS' and dd_b' would determine the competitive price (OP_c) and quantity (OQ_c). As can be seen, the price the monopsonistic buyers pay is lower than the competitive price. For more detail, see Bain, *Pricing*, 382–88; J. Robinson, *The Economics of Imperfect Competition* (London, 1954), 218–23.

[173] A comparison of the outcomes under simple monopsony and perfect monopsonistic price discrimination is presented in Figure 3. The curve dd_b' is the unified monopsonistic buyers' marginal revenue curve (MR_b); SS' is the supply curve the monopsonistic buyers face, reflecting their average outlay (AO_b) and the sellers' marginal cost (MC_s); MO_b is the monopsonistic buyers' marginal outlay curve; and AC_s is the sellers' average cost, or the average price at which various quantities can be obtained under perfect discrimination. Under simple monopsony, with market pricing, i.e., setting a market price for all units and accepting what is offered at that price, the monopsonistic buyers would equate their marginal revenue ($dd_b' = MR_b$) to their

however, depends on the number of separate sources into which the total supply can be divided and on the supply conditions of each source. Thus, when monopsonistic buyers face too many sellers (whether individuals or groups), establishment of the degree of direct contact with each seller necessary to assess his individual circumstances may be quite impracticable. Further, it is questionable whether in the normal course of events market conditions would have always been favorable to the monopsonistic buyers, or, even if such conditions were propitious, whether it would have been in the long-term interest of the metaxopratai to take an extreme position and practice ruthless price discrimination. Finally, it is important that no transfers took place between sellers[174] and that the monopsonistic buyers had to estimate the minimum prices sellers would be willing to accept, no easy task, particularly if the sellers had room to maneuver, for example, by withdrawing temporarily from the market. It would seem, then, that perfect monopsonistic price discrimination was achievable only under rather circumscribed conditions, namely, if the monopsonistic buyers dealt with a limited number of sellers who were unable to act in concert and if the buyers were able to ascertain and take advantage of the suppliers' waning ability to wait for better prices, as, for example, when they approached the end of their sojourn in the capital.

The Cocoon Import/Raw Silk Market: The Domestic Sector. The metaxopratai sold the imported cocoons and raw silk to katartarioi, who held the processing monopoly, just as the former had a monopoly on import and domestic sales. Nonetheless, the view is advanced that the metaxopratai overpowered the katartarioi, allegedly because the latter were an impoverished and helpless lot, and because the interposition of the metaxopratai between katartarioi and serikarioi in the sale of yarn considerably enhanced their market position. According to Lopez, the metaxopratai in effect "controlled" the entire guild of katartarioi, and raw silk processing was rendered an "ill-rewarded" craft. His conclusion is based on the fact that the katartarioi could join in the collective purchase of the imported raw silk only if invited to do so by the metaxopratai, because they could buy only as much as they could process, and because they could not sell yarn directly to serikarioi but only to metaxopratai. In fact, this fiat monopoly in yarn production was illusory, as it remained unenforceable.[175] Earlier, Mickwitz stressed the close dependence of the katartarioi on the metaxopratai, on grounds that the latter provided the only outlet for the sale of silk yarn and, in consequence, the katartarioi would have had no alternative

marginal outlay (MO_b), purchase the quantity OQ_1, and pay a uniform price OP_1 per unit. Under perfect price discrimination, SS′ becomes the monopsonistic buyers' marginal outlay ($SS' = MO_b$) and AC_s their average outlay ($AC_s = AO_b$). This is so because the price of inframarginal units is not altered by purchasing added units and this makes the marginal outlay curve coincide with the supply curve, whereas the average outlay curve lies correspondingly below the supply curve. The monopsonistic buyers will equate their marginal revenue ($dd_b' = MR_b$) to their marginal outlay ($MO_b = SS'$), purchase the quantity OQ_2, and pay an average price OP_2, which is lower than OP_1. For more detail, see Bain, *Pricing,* 426–29; Robinson, *Imperfect Competition,* 225–27.

[174]The *Book of the Eparch* does not explicitly prohibit inter-supplier trade before the market day. However, since such deals could lead to concentration of the imported raw silk in the hands of a few suppliers and thereby enhance their bargaining power, a concerned *legatarios* probably gave oral instructions that trading among external suppliers was prohibited. Covert transfers could be detected because of the narrow confines of the *mitata* and because merchants had their wares inspected on arrival.

[175]Lopez, "Silk Industry," 16 and 18–19. On the fallacy of forward and backward integration into spinning by metaxopratai and serikarioi, see above, pp. 271–74, 284–89.

but to accept the price offered by the metaxopratai. He further maintained that the katartarioi relied on the metaxopratai for suppliers' credit and that the metaxopratai held back those poor katartarioi to whom they farmed out the processing of raw silk by paying them in advance and by squeezing their piece-rate wages.[176] The notion that the katartarioi held a weak market position and were economically oppressed is persistent and generally accepted.[177] However, analysis of the institutional setting, market fundamentals, business calculus, and the nature of competition that resulted, as presented in this and the next section, indicates that it is unlikely that the metaxopratai were in a position to exercise controlling power over the katartarioi and that the impression of the katartarioi as disempowered and prostrate at the feet of the metaxopratai is unwarranted.

As already suggested, a guild's sales monopoly established by fiat does not necessarily translate into the ability of individual guild members to exercise monopoly pricing power in the marketplace, as such faculty rested on an array of preconditions.[178] This notion is predicated on the assumption that the metaxopratai formed a monolithic block of like-minded businessmen who acted in a coordinate fashion, since allegedly one of the purposes for instituting the guild system and the provisions of the *Book of the Eparch* was to limit price competition among members of the same guild.[179] In contrast to practice in the West, the Byzantine guild system did not aim to raise or maintain prices through concerted action, since such conduct ran counter to the anti-monopoly tenor of the law. The law did not impose price discipline on guild members to thwart intra-guild competition and protect individual members' shares in the total business. This is evidenced by the facts that neither prices nor profit margins were fixed at the manufacturing or distribution stages of the production process, while the guilds had no exercisable influence over the imperial authorities,[180] that no external or internal regulations ensured equality

[176] "Organisationsformen," 72–73; idem, "Un Problème," 26. On the nature of the skills and the type of work performed by the workmen hired by the metaxopratai, see above, pp. 271–72, 275–76.

[177] See note 97.

[178] See above, pp. 269–70.

[179] Lopez, "Silk Industry," 18.

[180] On the lack of political power by the silk guilds, see note 26 and pp. 273–74, 330. That price competition was fostered and price determination left up to the parties to the exchange is also evidenced from the following stipulations in the *Basilics:* ἐπὶ τῆς πράσεως καὶ τῆς ἀγορασίας ἔξεστι κατὰ φύσιν ἀλλήλους ἐν τῷ τιμήματι περιγράφειν τοὺς συναλλάσσοντας (X.4.16[4]); φυσικῶς ἐν τῇ πράσει καὶ τῇ ἀγορασίᾳ, καὶ τῇ μισθώσει καὶ ἐκμισθώσει, περιγράφομεν ἀλλήλους ἐν τῷ ποσῷ (XX.1.22[3]). The scholium reinforces the argument (ibid.): ἐπὶ τῆς πράσεως καὶ τῆς ἀγορασίας φυσικῶς συγκεχώρηται τὸ πλείονος ἄξιον ἥττονος ἀγοράζειν, καὶ τὸ ἥττονος πλείονος πιπράσκειν (goods of higher market value may be purchased at a lower price, while goods of lower market value may be sold at a higher price, if market conditions so dictate). Lopez's own statement that "in the rising oligarchy of the masters there was no room for the unsuccessful craftsman" ("Silk Industry," 16) clearly implies the existence of intra-guild competition. Even in the case of basic staples handled by guilds, such as bread (XVIII.1), fish (XVII.1), meat (XV.2), wine (XIX.1), or groceries (XIII.5), the authorities fixed maximum profit margins, not maximum retail prices. This is quite a progressive pricing policy, since profit capping, though intrusive, is much less disruptive of the functioning of the market mechanism and of the price formation process than outright price fixing. The reason is that the wholesale price structure of the consumer goods affected—the bedrock for retail price formation—is allowed to reflect the prevailing demand and supply conditions as well as prospective price movements. Besides, price fixing would have been counterproductive, as it would have led to shortages and black markets. Also, setting profit margins did not preclude competition, as some vendors might have accepted lower margins in order to increase their volume of sales, aiming to maximize their total, instead of unit, profits. At the same time, price competition was reinforced and consumers' interests were safeguarded through anti-monopoly legislation (see note 190), while the *Book of the Eparch* addressed specific instances of unconscionable bargains resulting in excessive

in the scale of individual enterprise operations, that there were no restrictions on the quantity or quality of inputs that could be used in manufacturing, that new entry into the industry was not legally impeded,[181] and, finally, that the exit of inefficient firms under normal competitive conditions was not hindered. On the other hand, incipient or potential competition provided a powerful deterrent to price-fixing agreements.

Nor, as has been argued, were the regulations of the *Book of the Eparch* designed to protect guild members from the competition of unorganized craftsmen and noble owners

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profits and criminalized such business conduct. Thus, businessmen were forbidden to hoard imported commodities at times of scarcity in order to raise prices and exact a profit exceeding what is "fair" (μὴ ἀποθησαυρίζειν δὲ ταύτην [πραγματείαν] εἰς καιρὸν ἐνδείας πρὸς παράλογον κέρδος, μήτε μὴν πολυολκεῖν τὰς τιμὰς πέρα τοῦ δέοντος): X.2, XX.3.

In certain transactions—e.g., contracts related to the building trade, and provided that the work involved was originally miscalculated by the contractor, the agreement was subsequently modified by the employer, the extent of the undertaking proved to be uncertain (*Book of the Eparch,* XXII.3; *Hexabiblos,* III.8.42), or the sale of real property prompted by financial need or ignorance (*Basilics,* XIX.10.66; *Peira,* XXXVIII.5 and 12; *Hexabiblos,* III.3.69, 71, 72)—if the price paid was less than half of the "just price" (δικαία τιμή), the contractor or seller (or their heirs) could request (within four years) either the difference between the amount paid and the fair price or the invalidation of the transaction on grounds of excessive injury (ὑπέρογκος βλάβη, *laesio enormis*). In sales of assets the seller had to reimburse the buyer, whereas in the building trades the value of the work already performed was reassessed. Nonetheless, in some cases sales could still be effected at prices less than the just price, as in, e.g., disposal of an unprofitable asset or opportune sale made to avoid an anticipated decline in the price of the asset; but in these instances the seller could not seek restitution (δύνασθαι ἐπὶ συμφώνοις τισὶ πωλεῖν ἕκαστον καί ἧττονος τοῦ δικαίου τιμήματος; *Ecloga,* XVI.30; *Hexabiblos,* III.3.73 and scholium). Provision XIX.10.66 of the *Basilics* was applicable only to landed property, and certainly not to ordinary commercial transactions, e.g., in dry or perishable goods, since such notions as ignorance of the much higher value of the commodity sold, negative (even if excessive) profit, or need are insubstantial in business deals and contrary to trade practices. Also, the four-year statute of limitations for recovery is hardly in the interest of commerce, which is concerned with the speedy resolution of disputes. The Byzantines did not express the concept of just price in precise economic terms. However, from the economy of the law it appears that in both commercial and non-commercial transactions they had identified just price with the going market price established under competitive conditions. On the origin, socioeconomic foundation, economic definition, scope, operationalization, and enforcement of the just price, see the author's "Operationalization of the Concept of Just Price in the Byzantine Legal, Economic and Political System" (forthcoming). The notion of "just price" (or versions thereof) had permeated the agrarian and interest-rate legislation in efforts to curb the injustices inflicted upon weaker individuals. See *ODB,* s.v. "Just Price"; Kazhdan and Constable, *People and Power in Byzantium,* 44–45; A. A. Vasiliev, *History of the Byzantine Empire* (Madison, 1958), 1:346–49; Ostrogorsky, *History of the Byzantine State,* 272–76 and 280–82; P. Lemerle, "Esquisse pour une histoire agraire de Byzance," *Revue historique* 219 (1958): 254–84; Cassimatis, *Les Intérêts,* 49–66 and 112–27.

[181] Although conditioned on certain qualifications (integrity) and requirements (payment of a small fee), legal entry into the silk manufacturing and trade guilds was unrestricted, and the decision on accepting new entrants was not made by guild members or even their chiefs but by the eparch (IV.5; VI.6, 7; VII.3; VIII.13; XII.2). Cf. Christophilopoulos, Ἐπαρχικὸν Βιβλίον, 37–38 and 51. At times, new entry was probably challenged by existing members, but it is unlikely that they could sway the eparch's decision, as he was keenly interested in increasing productive capacity and in fostering intra-guild competition. Entry was probably denied only when it would result in chronic excess capacity and oversupply leading to cutthroat price cuts, subnormal earnings to enterprises and labor, and high rates of business mortality—i.e., to prevent excessive or destructive competition. Such a situation would arise in an industry of atomistic market structure where privately organized collusive price-output determination is effectively unavailable as a counter-measure against general industry distress. On the other hand, as argued above (p. 280), the entrance fee levied by the guilds (IV.5, VI.6, VIII.13) was nominal and could hardly have been intended to forestall new entry to deter competition between existing and new members, as Christophilopoulos has asserted: Ἐπαρχικὸν Βιβλίον, 54.

of workshops.[182] As already discussed, the reasons the law discouraged the development of silk manufacturing activities outside the controllable organizational structure of the guild had nothing to do with fending off potential competition.[183] The silk industry in the capital was expanding, and there was no need to protect member market shares from outside competition through restrictive measures. Moreover, a competitive mindset was fostered by relatively unconcentrated market structures, low barriers to new entry, unimpeded imports, and the institutional setup. Contrary to what has been asserted,[184] guild members could ill afford to become lax or complacent; they were not immune from competition.

The degree of market concentration was an important factor in determining the different players' attitudes and pricing behavior. The evidence points to the existence of a large number of metaxopratai who were running enterprises of varying sizes and to unrestricted opportunities for augmenting their ranks.[185] But even in such an unrealistic situation as a highly concentrated oligopoly, it is unlikely that the metaxopratai's alleged dominance would obtain. In such a market structure, a few large metaxopratai would ostensibly control the entire market (or at least the bulk of the marketed raw silk, sharing the remainder with a limited number of smaller sellers, all supplying a homogeneous product to atomistically organized raw silk processing establishments).[186] Since each large oligopolist controlled a significant fraction of the marketed output and was in a position to influence the market price by output adjustments, each seller would have determined his price and output in light of the actions of rival firms, which would have given rise to price uncertainty. The final outcome would have depended on whether inter-seller rivalry was active, which would have allowed prices to slide toward competitive levels, or if the rivalry ended in a compromise at some mutually satisfactory price level, permitting a measure of excess profits.[187] Persistent excess profits would have invited new entry, since there were no legal barriers to new competition and economic barriers were low, confined essentially to capital availability.[188] In the long run, therefore, prices and profits were unlikely to remain substantially above atomistically competitive levels.

[182] Kazhdan and Constable, *People and Power in Byzantium,* 31; Frances, "L'État," 239–41; Lopez, "Silk Industry," 15–16; Mickwitz, *Kartellfunktionen,* 228–31 and 234.

[183] See above, pp. 269, 279–80, 297–98.

[184] Oikonomidès, "Le Marchand byzantin," 658; idem, "Entrepreneurs," 157 and 160; Kazhdan and Constable, *People and Power in Byzantium,* 48.

[185] See notes 160 and 218.

[186] Product homogeneity means that the product of any one seller is viewed by buyers as identical to the product of any other. This means that, for the buyer, any firm's product is a perfect substitute for the product of any other firm in that market; in consequence, he is indifferent as to which firm he buys from. Raw silk and yarn are such commodities. In an atomistic market setting, product homogeneity implies the inability of sellers to raise prices without loss of market share. In an oligopolistic setting, none of the larger sellers can independently cut prices without triggering a chain of retaliation, nor can any such firm independently raise prices and hope to maintain its sales volume unless it can induce its rivals to increase their prices as well.

[187] See the discussion on oligopsony above, pp. 302–3, which is the logical counterpart of oligopoly.

[188] If they encountered a conflict of interest, wished to remain inconspicuous, or were unwilling to be involved in person in day-to-day operations, venturesome wealthy individuals and noblemen could enter the silk industry at any stage of the production cycle by using their slaves as surrogates. Such involvement has been criticized as an infiltration of lucrative businesses or as a stealthy, forcible, and exploitative action, deriving from the exercise of political or economic power: Jacoby, "Silk in Western Byzantium," 477; Frances,

A more plausible market setting would be one of low oligopolistic concentration, involving quite a few large metaxopratai in competition with many small sellers who supplied a substantial proportion of the market. As each seller faced an elastic demand, raising the possibility that he could lose all his sales to others if he raised his price perceptibly (or, alternately, that he could appropriate his rivals' customers if he lowered his price and his move met with no response), the price-output pattern likely to emerge was one in which the price was close to the minimal average cost with low or no excess profits. Low entry barriers would reinforce this outcome. In general, in oligopolies (oligopsonies) with homogeneous products facing unconcentrated buyers (sellers), the price is likely to be lower (higher) the larger (smaller) the number of firms in the group, until in the end there are enough firms for atomistic competition to emerge.[189]

A market structure equally, if not more, likely to prevail would be one defined by a fairly large number of metaxopratai (and katartarioi), encompassing establishments of quite different sizes, in which no one firm controlled a substantial proportion of the marketed output. Large membership, product homogeneity, and low entry barriers would have weakened monopolistic tendencies and, in consequence, the metaxopratai would have had little measurable influence over the price they charged, at least in the medium and long term, as such conditions were conducive to atomistic competition.

Market dominance could also be achieved if the members of the guild of the metaxopratai could enter into formal or covert agreements that covered every transaction, setting uniform prices or sales quotas and driving all-or-nothing deals. To be effective, however, collusive agreements had to have enforceable schemes to restrict sales, maintain prices, and discipline fractious members, and have had the consent or acquiescence of the overseeing chiefs (and, by extension, of higher authorities). It would, however, have been extremely difficult to effect and sustain such schemes, even if initially successful, because they are not durable. Collusive agreements tend to be fragile and break down even in highly concentrated markets, because antagonistic tendencies among rival mem-

"L'État," 239–40; Muthesius, "Byzantine Silk Industry," 34–37. Yet, such entry, far from being surreptitious, suspect, and inimical, should rather be viewed as a conscious effort on the part of the authorities to provide a vent to latent entrepreneurship and tap a source of capital for the expansion of the silk industry. New entry would promote competition through the growth of guild membership, expand production for domestic consumption and exports, and increase the chances of employment and better pay for the capital's workforce—policy objectives yielding significant economic and political dividends. At the same time, this open invitation encouraged potential entrants who did not share the prevailing elite bias against less socially respected economic endeavors to participate, albeit under the state's terms and under the eparch's watchful eye. It is noteworthy in this context that the privilege of the nobility to purchase imported silks directly (V.4) and the prohibition against using surrogates to acquire raw silk (VI.10, VII.1) did not intend to exclude them from participating in the silk trade or manufacturing, as Vryonis has hypothesized ("Byzantine Δημοκρατία," 298). The rationale for these stipulations is discussed in pp. 269–71.

[189] Realistically, a certain level of intermittent excess (or subnormal) profits is unavoidable in a free enterprise system. Atomistic or pure competition is an ideal normative standard, and its conditions are unlikely to be fulfilled in a dynamic market environment. Indeed, it is highly improbable that at any moment all firms in an industry will be earning normal profits. A distinction therefore should be made between persistent excess profits arising from the exercise of sheer monopoly power and those arising periodically because of unsatisfied demand, since prices rise to restore the equilibrium between supply and demand. In the latter instance, price increases reflect shortages and signal the need to expand capacity. As supply increases, excess profits are eliminated. Persistent subnormal profits, on the other hand, signal the need to contract capacity. As supply decreases, profits are restored to normal levels. Hence, reference to atomistic competition literally implies the prevalence of conditions approximating atomistic market structures.

bers lead them to deviate from perfectly collusive behavior. Typically, some metaxopratai would have soon found that different selling prices were more profitable since cost structures and market shares varied among firms. Unequal financial strength among guild members would have tended to undermine the cohesiveness of the group: weaker members would have had a lower threshold of compliance and a stronger incentive to cheat, particularly during depressed business conditions. High prices encouraged veiled price cuts in the form of special concessions, discounts, or rebates, prompted defections, and invited new entry. For the same reasons, such informal devices as price leadership were unlikely to be sustained, especially in a multi-player setting. Finally, uncertainties surrounding explicit or tacit cooperative actions, in particular, the difficulties in keeping such agreements from collapsing, increased with the number of establishments involved, to the point that such arrangements became unmanageable. In general, internal and external pressures in contestable markets tend to undermine the effectiveness of collusive arrangements.

Another potent deterrent of collusive business behavior has been conveniently overlooked. Express or tacit agreements to restrain competition and fix prices were forbidden and punishable by law. Conspiratory actions would have prompted authorities to crack down ipso jure or at the urging of the aggrieved katartarioi.[190] It would have been difficult to put into practice, let alone enforce, unfair methods of competition under the watchful eye of state-appointed chiefs who served as overseers of guild members' conduct. And, had official protestations or legal action from the katartarioi failed owing to venality, some retaliatory show of force would have to be expected, possibly leading to disruptions of silk production and trade. This would have agitated the serikarioi and vestiopratai as injured third parties, created social unrest, and triggered government action to protect the interests of the state and downstream guilds.

At this point a question can be raised about the extent to which à façon arrangements were conducive to exploitation of the participating katartarioi. The answer is very little, if at all, because such commercial transactions were conducted between principals, that is, independent businessmen, and the agreements were voluntary and mutually beneficial. No party could be coerced into joining. Nevertheless, as commonly happens in the

[190]*Monopoly,* i.e., dominant market control by one firm or by several acting in concert, and *monopolization,* i.e., market conduct involving actions undertaken to secure and maintain a monopolistic market position by effecting the weakening, elimination, or exclusion of competitors (e.g., through such predatory or exclusionary tactics as monopolization of inputs, predatory price cutting, entry-forestalling pricing, vertical or horizontal agreements, or conspiracies) were forbidden and punishable by law, as were express or tacit agreements to fix prices. The penalties inflicted ranged from stiff fines to confiscation of property and permanent exile. Tribunals were also liable to penalties if, because of venality, discrimination, or other failings, they did not enforce the law: *CI,* IV.59; *Basilics,* XIX.18.1. The preamble of the *Book of the Eparch,* in setting forth the animus of the statutory provisions (*ratio legis*), emphatically states that the parties to commercial transactions should not brazenly take advantage of one another, the financially stronger should not do injustice to the weaker, and no person oppress his fellow man, but that all actions should be governed by the rule of law: Nicole, *Livre du Préfet,* 13. In essence, the *Book of the Eparch* not only reflected the official industrial and commercial policy, but was also an extension of the pertinent legal provisions that sought to restrain monopoly and promote competition. To be sure, anti-monopoly legislation is difficult to implement because it is hard to detect and prove such actions, especially when illicit agreements are informal. Political influence could also attenuate the force of statutory provisions, particularly in the provinces. Nevertheless, the situation is quite different under a guild organizational structure, where patterns of illegal conduct and flagrant transgressions of the law could hardly elude the attention of the vigilant chiefs.

marketplace, strong competition among katartarioi to enter into such contracts could have decreased their profit margin and resulted in subnormal profits. The opposite could have occurred, however, when for example strong demand for such arrangements from the metaxopratai enabled the katartarioi to reap excess profits.

To summarize, the nature of emerging market structures, the inauspicious prospects of inter-seller coordination, and the unobstructed possibilities for new entry strongly suggest that the metaxopratai wielded no appreciable monopoly power of a lasting nature. The prevailing market setting and institutional arrangements unleashed robust competitive forces and shaped individual behavior conducive to establishing conditions that approximated atomistic competition, although, in light of ever-changing market fundamentals, short-lived aberrations resulting in excess profits cannot be ruled out. The fact remains that the Byzantines relied on competitive forces to a much greater extent than we have been led to believe. Strained parallels regarding the purpose and tactics of the Byzantine guilds drawn from much later experience in the West are clearly unwarranted.

The Two-Tier Yarn Market

The Backdrop of the Katartarioi-Metaxopratai Rivalry. In the first stage of the two-tier yarn trade, the katartarioi supplied the metaxopratai with yarn under market conditions substantially approximating atomistic competition, as discussed above. It is not a foregone conclusion, however, that all metaxopratai were involved in the yarn trade. Possibly, some metaxopratai were unwilling to enter the market or were unable to compete in the second-tier resale market, since some firms could obtain discounts on cash or high-volume purchases or acquire yarn at a lower cost because of à façon arrangements. If this had occurred on a large scale, the yarn trade would have been concentrated in fewer hands. Even if the katartarioi had faced a somewhat concentrated group of metaxopratai, who provided the only outlet for their products, this would not necessarily have meant that the metaxopratai were in a position to dictate at will the buying price or subject the katartarioi to odious exploitation. Market fundamentals and legal restrictions exercised a powerful disarming effect on their behavior, as has been demonstrated in the preceding section. Even if the metaxopratai could somehow seize an opportunity to fix prices collusively and exercise monopsony power with impunity, concerted action is unlikely to have been enduring, as it would have been extremely difficult to coerce the compliance of all members of the group. Moreover, the fragility of collusive agreements and the unimpeded entry of new players would have heightened inter-seller rivalry, as competing metaxopratai tended to raise prices offered for yarn in order to secure needed supplies, thus driving prices up toward atomistically competitive levels.

More importantly, it would have been contrary to the best interests of the metaxopratai to price aggressively and drive the weaker katartarioi out of the market. Business failures would have resulted in reduction of raw silk processing capacity, concentration of market power in the hands of fewer but more entrenched katartarioi, and their ability not only to resist downward pressures on prices but even to raise prices. The fact is that the metaxopratai relied on the katartarioi for uninterrupted delivery of high-quality yarn, and fulfillment of this function required not only that the katartarioi stay in busi-

ness but also that they be able to expand their productive capacity to meet the growing demand, something that was all the more critical since the metaxopratai were prohibited from involvement in yarn production. These economic imperatives underscore the advantages of a "live and let live" approach over an aggressive pricing policy, advantages the metaxopratai fully recognized. To be sure, such a business conduct may have entailed a significant attitudinal shift, but it was motivated by sheer economic calculus, not compassion.

Failure rates were probably higher among smaller raw silk processing enterprises, although it was probably not very different from that experienced in other guilds, since small firms have greater vulnerability to economic vicissitudes, limited capacity to service debt, and vary widely in their ability to compete. The authorities were fully aware that some business failures must be expected in a competitive system and that the exit of anemic firms should not be prevented through ad hoc measures of dubious efficacy (e.g., price controls or restriction of new entry). Eventually, existing firms and new entrants would fill the gap left by the defunct enterprises, at a pace dictated by market conditions and entrepreneurial capacity. Operating on this premise, the guild system did not stifle competition among members or interfere with the exit of uncompetitive firms; it sought only to provide equality of opportunity for all members so they could compete fairly.

It should be appreciated that yarn production was a vital part of the silk manufacturing process and that the katartarioi continued to discharge this function without interruption or depletion of their ranks as evidenced by the continued growth of silk manufacturing over the years and sustained levels of silk production and trade. Although ebbs and flows were inevitable, the secular trend of demand for silks remained strong and apparently rose,[191] naturally increasing the demand for the services of the katartarioi and strengthening their market position. Operating within such a dynamic economic environment, as a group the katartarioi could hardly have been forced into abject poverty or become defenseless objects of exploitation in the hands of the metaxopratai.

The Setting of Metaxopratai-Serikarioi Competition. The serikarioi were not permitted to be involved in yarn production and were obligated to buy yarn only from metaxopratai, as by law the latter retained the monopoly in the yarn resale market. This meant that the serikarioi had no access to raw silk and could not enter into à façon arrangements with katartarioi to process raw silk. As in the case of the metaxopratai, membership in the guild of serikarioi was quite extensive, the range of enterprise sizes broad, legal entry into the guild unobstructed, and the barriers to new entry apparently low or moderate.[192] This market morphology formed the basis and shaped the conduct of the members in these two guilds as they traded in the second-tier yarn market.

Emergence of an oligopoly with moderate seller concentration, involving quite a few large metaxopratai and a large number of small firms facing competitive buyers or, alternatively, an oligopsony with a moderate buyer concentration, involving quite a few large serikarioi and a substantial number of small enterprises supplied by competitive sellers, was not outside the realm of possibility. However, in either instance the ability of the

[191] See below, pp. 326–28.

[192] On the conditions of entry at the manufacturing stage of the silk industry, see below, pp. 322–23 and note 181.

established sellers or buyers to take advantage of their respective market position would have been substantially restrained. As has already been pointed out, the fact that the guilds of metaxopratai and serikarioi held fiat monopolies in their respective fields certainly did not enable individual guild members to exercise monopoly or monopsony pricing at their discretion. Recognized interdependence regarding price-output policies, threat of new entry, product homogeneity, independent pricing, and unworkable collusion schemes were likely to induce established firms to price at a point lower than the group's profit maximizing level—indeed with a good chance that such a price might even come fairly close to competitive levels.

A market structure more likely to emerge, though, was one in which a core of quite a few sellers and buyers had significant presence in the yarn market, while the remainder, representing a substantial proportion of the marketed output, was held by a large number of small firms—a bilateral oligopoly with a large competitive fringe. In such low oligopolistic *cum* oligopsonistic concentrations, price rivalry and imperfect collusion are more likely. In particular, the strong presence of a large competitive fringe of small firms, predisposed to act like competitors in an atomistic market and not easily policed or coerced into concurrence on a price set collusively by the large firms, would tend to drive the price toward the competitive level. For, while each small firm acts on the legitimate assumption that its own moderate price changes will induce no reaction from rivals since they will not perceptibly affect other sellers' sales or buyers' purchases, the combined effect of such tactics by many small firms tends to erode the market shares of the large firms and enhances the probability of independent pricing by them. This tendency will be stronger the greater the number of large firms and the smaller the proportion of the market they control, because the force of recognized interdependence tends to be attenuated, and as it weakens independent pricing is encouraged since the effects on rivals become less definite.

An equally likely market structure would be one approximating atomistic competition. In such a setting, both sellers and buyers are so many in number and so small in size that no one of them has appreciable control over price, while concerted action by both groups would not be sustainable even if temporarily achievable. As buyers, the serikarioi would have been able to shop around and negotiate on an individual basis, exploiting comparative cost advantages among sellers, while as sellers the metaxopratai would have been able to select their clientele only as long as they took steps to remain competitive. Product homogeneity would have reinforced the ease with which the serikarioi could change suppliers, forcing potentially aggressive metaxopratai eager to retain the patronage of the serikarioi and maintain market share to price competitively. Moreover, the institutional setup, that is, anti-monopoly legislation and the guild system, afforded both groups a potent defense mechanism against monopolistic/monopsonistic tendencies, in that it enabled the aggrieved party to frustrate non-competitive behavior initiated by the other.

The fact that the serikarioi were not allowed to produce in-house yarn to meet their requirements but depended exclusively on the metaxopratai for supplies may sustain lingering assumptions about the latter's potential to sway prices. However, aside from the restraining effect of market fundamentals and institutional arrangements already mentioned, an important element the metaxopratai had to factor into their economic

calculus was that the demand for yarn derived from, and depended on, the demand for silks—the primary source of demand.[193] Since yarn accounted for a significant proportion of the final product's cost and no close substitute for silk yarn existed, a substantial price increase could measurably weaken the demand for yarn and force the serikarioi to curtail production, unless offset by an increase in productivity or a reduction in profit margins, to both of which actions there were limits.[194] In the face of a fairly elastic demand for many final products, an attempt to pass cost increases on to the final consumers could result in a decline in the sales of silks,[195] production cuts, and a loss of business to metaxopratai. The upshot is that the metaxopratai could not remain indifferent to the potential impact of their pricing policies on the salability of the end products.

The Silk Fabrics Market

Mode of Production, Plant Scale, and Output Features. Although production of the large highly prized purple silks associated with imperial authority was forbidden, the private sector was nevertheless allowed to produce silk fabrics of fine quality and in large variety.[196] Apparently, cloaks and garments were the mainstay of silk production.[197] These silks differed considerably in terms of weave, type, design, color, size, cut, weight, and fiber-mix (e.g., silk weft, cotton or linen warp), resulting in a high degree of product differentiation[198] and considerable variation in price. Probably, there was a degree of product specialization among the serikarioi, in part dictated by capacity limitations. Focus on selected types of silks would also have simplified the organization of production and resulted in greater efficiency.

In a handloom mode of production, the manufacture of low-volume, high-quality, imaginatively designed, and expensive articles ensured maximum profitability. They also had the additional advantage of being easily exported. Sale of low-quality, low-priced, low-markup silks could be profitable only if they could be standardized and produced in large volume. However, demand for mass-produced silks was virtually nonexistent because end users desired fine silks for personal display.[199] Moreover, in an industry charac-

[193] The elasticity of the derived demand for silk yarn depended on the elasticity of the primary demand for silks, the proportion of the unit cost of silks spent on yarn, the degree of substitutability of other raw materials for silk yarn, and the response of the price of silks to changes in the costs of production.

[194] See below, pp. 319–22.

[195] See below, pp. 327–28 and notes 223, 226.

[196] Silks that the serikarioi were allowed to manufacture are listed in provisions IV.3 and VIII.1, 2, whereas those forbidden (κεκωλυμένα) are found in provisions IV.1 and VIII.1, 2, 4.

[197] Silk fabrics also included patterned brocades, scarves, tapestry and upholstery, quilts, shrouds, bed spreads, pillow cases, cushions, horse trappings, and the like: Jacoby, "Silk in Western Byzantium," 473 and references in nn. 114 and 115. Also included were church furnishings, hangings, vestments, and icon, Bible and altar covers: A. Muthesius, "The Hidden Jewish Element in Byzantium's Silk Industry: A Catalyst for the Impact of Byzantine Silks on the Latin Church before 1200 AD," in *Studies in Silk* (as above, note 6), 247. Macri erroneously thought that the restrictions were so pervasive that commercially produced silks lacked variety and were dull and inelegant: *Économie urbaine,* 57.

[198] Products are differentiated if buyers distinguish clearly the product of one seller from that of another. The distinction may be real or imagined, so long as it is of importance to buyers and leads to a preference of one variety of the product over another. Product differentiation, which can range from strong to weak, may also be based on such intangible factors as a seller's way of doing business or his reputation for fair dealing.

[199] See below, pp. 327–28 and note 226.

terized by wide product variation, skill intensiveness, painstaking labor, and emphasis on quality, the workshop form of industrial organization, as opposed to a putting out or a mass production factory system, fulfilled important desiderata: development of exceptional craftmanship, effective control of the work process (the entrepreneur usually being a hands-on worker as well), work discipline, and production of highly individualized items.[200] Finally, small plant scale, short production runs, and product diversification afforded flexibility and enabled producers to make adjustments as needed in the face of changing market conditions.

To be sure, the division of labor among guilds and attendant market fragmentation prevented the emergence of large and potentially more efficient economic units through vertical integration.[201] In theory, units of larger size are more likely to reap the advantages of economies of scale arising from team production, better techniques, and higher specialization, and benefit from more effective coordination of sourcing, production, and marketing activities, better balancing of output rates in successive processes, fuller utilization of equipment and skills, and reduction of intermediate inventories. Integration would also eliminate transaction costs in moving goods from one stage to the next by avoiding the need to monitor inputs for quality, preventing post-contractual opportunism (e.g., sizing, fraud, delays in delivery),[202] and eliminating the costs of enforcing unfulfilled or partially fulfilled contracts. In practice, however, it is debatable whether appreciable real economies could be attained in the face of the strong emphasis on product differentiation and given the stage of the industry's technological development.

Judging from the high quality of the silks produced, the margins for increasing specialization and improving production techniques, work methods, shop-floor organization, and overall efficiency do not seem to have been particularly significant. Apparently the degree of specialization in raw silk processing, dyeing, and weaving was already fairly advanced, and these advantages were likely reinforced by product specialization among firms. More importantly, there was no grass-roots demand, and, thus, no market pressure on the industry, to reorient production toward standardized, mass-produced silks. Product standardization was not a lucrative proposition because of strong cultural barriers, since silks were objects of distinction of a class-conscious clientele who expressed strong preference for variety and high quality. Hence, the industry had no economic incentive to seek novel production methods that would have promoted technological breakthroughs entailing large-scale production units and a fully integrated enterprise organization. Also, given the skill-intensive nature of production, capital deepening (i.e., increases in the quantity of capital per unit of labor) and plant scale were not essential to efficiency, as the level of technological development did not provide opportunities for further economies in production. The equipment was simple, the scale of the optimum technical unit in each production stage was small, and production runs were short.

[200] See above, p. 289.

[201] Lopez has been critical of the guild regulatory system as having an inimical effect on enterprise size, insinuating a missed opportunity for the silk industry to advance to a capitalistic stage: "Silk Industry," 18–20. Others have expressed similar views as well; see note 130.

[202] Opportunism has been aptly defined as "the ability of one party to an exchange to benefit at the expense of the other party by violating the agreement in his or her post-contractual behavior": D. C. North, *Structure and Change in Economic History* (New York, 1981), 36.

Finally, a heavily labor-intensive mode of production, constant returns to scale, and the ebbs and flows of demand favored small and flexible units. Under these circumstances, dramatic gains from vertical integration were not very likely.

Replacement of market transactions by process integration, that is, internalization within the firm, was not critical to ensure quality control either. The general pattern of exchange in the domestic trade was personalized,[203] owing to individual contacts, repetitive dealings, and a common set of values. The notion of property rights on the objects of exchange was deeply ingrained, an impersonal judicial system existed to settle differences, and procedures were in place to enforce contracts. In addition, opportunism in the organized and localized silk market of the capital was further constrained by competition engendered by the large numbers of players, as sellers were forced to meet contract specifications and contractual obligations for fear of losing business to competitors.[204] Further, although exchange in external trade was impersonal, it had a distinct local character, as transactions were always consummated in the capital. Again, competition constrained the behavior of the parties to the exchange, while the promulgation of a code of conduct by the state ensured the enforceability of property rights in a court of law, safe passage to foreign traders, and certainty in the handling of their affairs—a milieu that provided the requisite underpinnings for widening of the market and the overall growth of trade.

In this scheme of things, transaction costs were reduced substantially, since the uncertainty and distrust inherent in market transactions were minimized and prices could be acceptably determined. Therefore any supposed advantages of setting up a long hierarchy within a firm, effectively substituting factor markets for output markets, were negated. In any case, process internalization is not necessarily less costly than input purchases on the market, as elaborate in-house monitoring devices must be set up in large firms to effect coordination of activities, oversee worker performance and prevent shirking, and secure quality control. Significantly, by the tenth century, the growing size of the market had brought about important changes in the economic organization of the private silk industry, involving a shift away from the undivided performance of consecutive tasks typical of home and handicraft production, toward an organizational form with central workshops of a respectable size and characterized by extensive separation of tasks and coordinated teamwork. This transition ensured not only that productivity gains from team production and specialization but also quality control could be achieved at a comparatively low cost, because firms involved in small batch production had a short hierarchy. As processes were not complex, the firms relied primarily upon worker self-discipline, and management was very close to production work. This simplified considerably the task of

[203]On the distinction between personalized and impersonal exchanges, see North, *Structure and Change,* 40, 182, 204.

[204]Personalized exchange *cum* third party (i.e., state) enforcement in the Byzantine domestic trade adds a fourth dimension to North's triadic construct of historical patterns of economic exchange: D. C. North, *Institutions, Institutional Change and Economic Performance* (Cambridge, 1990), 34–35. North distinguishes the following evolutionary patterns in the West: personalized exchange, involving local trade and characterized by the absence of third party enforcement; impersonal exchange, involving long-distance and cross-cultural trade, in which the state's role as protector and enforcer of property rights was ambiguous at best, since the state's engagement led to greater insecurity and higher transaction-costs; and impersonal exchange with effective third-party enforcement characteristic of successful modern economies.

supervision and assessment of the agents' performance in principal-agent (i.e., employer-worker) relations.

In sum, two important advantages of vertically integrated firms, namely reduction in production costs due to scale economies and avoidance of transaction costs by retaining ownership of materials throughout the manufacturing process, eluded the small factory firm, which was the organizational form prevalent in Constantinople's silk industry. Further, the industry's capacity for incremental productivity improvements—achieved by solving practical production problems, improved techniques, taking advantage of widening markets through new investment, or adaptation of organization and work methods—was not impeded under the guild system, as enterprise growth, new entry, competition, and profit motive were not suppressed. Moreover, there is no certainty that a vertically integrated firm will operate at rated capacities in all stages of production in which they are engaged or at all times, as is necessary for the avowed benefits of integration to accrue. Unstable demand, balancing problems, irregular input inflows, the temptation of firms operating in concentrated markets to restrict output and raise prices to gain monopoly profits, and other imponderables are all factors unconducive to full capacity utilization, negating the benefits of integration, raising real production costs, and increasing social costs.

Nature of the Barriers to New Competition. Established firms tend to have an advantage over potential new entrants, and this could measurably affect the degree of market competition. Economic barriers to new entry in silk fabric manufacturing were likely to include superior techniques possessed by existing firms (e.g., dyeing), possibly maintained by secrecy; lack of access by entrant firms to capital, skilled labor, or managerial capacity; scarcity of suitable workshops; and insufficient entrepreneurial talent. Prima facie, the required fixed investment in sheds, weaving equipment, and dyeing facilities affected prospects for the new entrant, raising barriers to new competition and enabling entrenched serikarioi to forestall new entry and reap excess profits. Nevertheless by opening a small plant, confining start-up production to one sub-process (e.g., only weaving), and renting industrial premises, initial capital requirements could be reduced substantially, while the contracting out of dyeing might not appreciably raise production costs. Shortage of industrial space would tend to raise rentals but, in the absence of rent controls, this would spur construction, increase supply, and alleviate the pressure on rents.[205] Product variation could make it possible for potential entrants to enter the field at a minimum economical plant scale and secure a niche in the market. Expectations of high returns in the face of growing market demand could attract local and provincial entrepreneurs, including seasoned operatives striking out on their own with financial backing

[205]The law (*Basilics,* XX.1.22[3] cited in note 180) imposed no ceilings on rentals. Leases were freely negotiable, and rentals could be renegotiated at agreed upon intervals or at the expiration of the lease. Nonetheless, the *Book of the Eparch* criminalized the acquisition of rental commercial properties (see note 96), mostly in prime locations and short supply, by deceitfully bidding up the rent. Apparently, the authorities were concerned that such a practice could create an unsettling business environment by unwarrantedly strengthening the bargaining power of landlords and forcing aggrieved tenants to accept excessive rent increases or face eviction. Clearly, the law did not prohibit rental adjustments that reflected changes in market conditions; rather, the aim was to frustrate opportunistic behavior.

from wealthy individuals.[206] Finally, availability of a pool of qualified workmen and on-the-job training of local and immigrant workers could augment labor supply. All in all, the barriers to new entrants in silk manufacturing were probably low or moderate—at best, exerting a catalytic effect on potentially high market concentrations.

The Wholesale Distribution Market. The serikarioi disposed of their output wholesale in a diffused and competitive market composed of numerous small- to medium-size vestiopratai and a flock of sojourning merchants in the capital, no one of whom could perceptibly influence his buying price.[207] As each producer strived to differentiate his products, the silk goods that reached the marketplace ranged from slightly differentiated to very distinctive and, perhaps, at times even "unique." This afforded individual producers a degree of "monopoly" power, the extent of which depended on the ability of rival producers to market substitutes,[208] the degree and pattern of seller concentration (number and size distribution of firms), and the condition of entry. The relative importance of each of these constituent elements set the tone for the structure, conduct, and performance likely to emerge in the wholesale distribution market.

A market structure in which a large fringe of small firms co-existed with a low-concentration oligopolistic core facing competitive buyers was not impossible.[209] In such a differentiated oligopoly with a large competitive fringe, the force of recognized interdependence of price policies among large serikarioi, which is characteristic of concentrated oligopolies, tended to be diluted, as moderate variations in price and sales did not perceptively affect the others. Active rivalry and independent pricing were encouraged, as cost structures and market shares differed among firms. Also, the possibility of imperfect collusion increased, as collusive arrangements became far more difficult to conclude and police, and defections and price cuts were encouraged since they would not have attracted retaliation. This pattern of market behavior becomes more pronounced as the

[206] For instance, a partnership could be formed in which the investing partner would supply the capital and, possibly, the place of work, while the managing partner would contribute his entrepreneurial and technical skills under an agreed-upon profit-sharing arrangement. For the legal foundation of partnerships (κοινωνία, ἑταιρία) see *Basilics,* XII.1.1, XVIII.1.13(2), XIX.8.76, XXIII.3.1, L.5.9; *Hexabiblos,* III.10.1–30, 11.1. Possession of technical skills was not a precondition for setting up shop in silk manufacturing, apparently because expertise could be obtained through hiring or partnership. The basic qualifying criteria of admission, which held for all silk guilds, were integrity (ὑπόληψις), capability (ἄξιος), and financial means (εὔπορος): VIII.3, IV.5, VI.6.

[207] See below, pp. 323–26.

[208] Products are close substitutes if a change in the price of any of them noticeably affects the quantity of the others purchased at given prices. This implies that the seller of a close-substitute product will be able to attract a significant portion of buyers of the other products by reducing his price because the products are competitive (and vice versa). The opposite holds when products are distant substitutes. See also note 213.

[209] It is doubtful that oligopolies of even moderate concentration, let alone highly concentrated markets, could have emerged in the silk manufacturing industry in the absence of: economies of large-scale production, in which a relatively small number of firms may be able to supply the entire market at a lower cost than most firms can attain; dominant advantage of product differentiation, such that buyers prefer the products of a few firms to other varieties of the same good to the degree that these firms are able to secure a major share of the market against all competitors; merger moves among sellers to eliminate competition among themselves and bring about a sufficiently concentrated market structure that competition among the remaining sellers could be easily suppressed; and ability of a few firms to secure absolute cost advantages permitting them to operate profitably at a price at which the others could not survive (e.g., control of strategic raw material supplies, legal or institutional prerogatives).

number of firms in the competitive fringe and the market share they supply increase, and is reinforced by actual or threatened new competition due to low or moderate entry barriers.[210] The confluence of these factors is likely to drive prices close to atomistically competitive levels and appreciably reduce excess profits.

A more likely market structure, however, was one in which many sellers with varying productive capacities, producing close substitutes but not identical products, and no one of whom controlled a significant proportion of the total output supplied a motley of foreign and provincial wholesale traders and the multi-buyer guild of vestiopratai. Such a setting is suggestive of a silk manufacturing and distribution industry operating under conditions of monopolistic competition, in which competitive and monopolistic traits were combined.[211] In this instance, small individual market shares and the virtual absence of conscious interdependence of the sellers' price policies mean that each seller, facing a demand curve that tends to be quite elastic,[212] will pursue an independent course, raising or lowering his price just enough to reduce or expand his sales without eliciting a rivalrous reaction from any other seller in the group. A monopolistic competition setting, however, could also include sellers with a substantial degree of discretion in setting prices. By making their product(s) distant substitutes, for example, through distinctive designs or color combinations, they could render the demand for their product(s) much less elastic,[213] thereby ensuring a considerable degree of discretionary control over price, effective insulation from price competition, and an opportunity to realize and sustain excess profits. It is noteworthy in this context that, since the sellers' demand curves could have slopes ranging from significantly negative (fairly inelastic) to approximately horizontal (very elastic) as a result of the varying degree of product differentiation, a range of prices and profit margins might have arisen, reflecting the buyers' differing valuations of the marketed products.

Strong product differentiation could ensure persistent excess profits even in the pres-

[210]Oligopolistic serikarioi enjoying cost advantages vis-à-vis potential entrants could either forego price increases and forestall entry or raise prices, accept new entrants, and hope that their profit margins would improve despite smaller market shares.

[211]Monopolistic competition is distinguished from both monopoly and atomistic competition. In atomistic competition, the products of all sellers are identical and therefore perfect substitutes. The demand curve each seller faces is perfectly elastic, or nearly so, signifying that he cannot perceptibly influence the market price of the product. The monopolist's product, on the other hand, has no close substitutes and his demand curve is inelastic, suggesting substantial control over price. In monopolistic competition, the individual seller has a product that no other seller duplicates, and in this sense he is a monopolist. But because there are close substitutes for his product, the demand for the monopolistic competitor's product will be more sensitive to a relatively small range of price changes than that of the monopolist, i.e., his demand curve will be more elastic, reflecting less discretionary influence on price.

[212]The more closely competitive substitutes there are, the more elastic the demand for the product of any one firm in the group will be.

[213]The elasticity of the individual seller's demand is a function of the degree of product differentiation and the number of sellers in the group. The strength and implications of the close or distant substitute relation can be captured by the notion of cross-elasticity of demand, which provides an index of the readiness with which buyers substitute one product for another. Thus, a distinction can be made between 1) a high cross-elasticity of demand, in which a small proportionate price reduction for any one product reduces the sales volume of every other product by a relatively large proportion, attracting buyers to the cheapest product, suggestive that the products are close substitutes; and 2) a low cross-elasticity of demand, as when a small proportionate price reduction by any one reduces the sales volume of every other product by a small proportional amount, suggestive that the products are distant substitutes.

ence of new entry and import competition. However, to the extent that production was centered on close substitutes, barriers to entry were relatively low,[214] and import competition was unrestricted, monopolistic competition tended to yield results not substantially different from those prevailing under atomistic competition since, in the longer run, excess profits tend to remain small or disappear.[215] Moreover, in this setup the serikarioi would have had great difficulty in making any concerted action given the large numbers, differentiated products, and unrecognized interdependence—a set of potent counteracting forces. Besides, any attempt at monopolization through collusion, even if practicable, would have been hard to enforce because of antagonistic tendencies among guild members, the attractiveness of defection from such agreements, likely retaliation from the guild of vestiopratai anxious to fend off aggressive pricing tactics of the serikarioi, and the almost certain intervention of the state to curb such conspiratory conduct. In contrast to later experience in the West, production and sales cartels were unknown in Byzantium.

The Retail Distribution Market. The retail market in silks comprised the vestiopratai and the prandiopratai. The vestiopratai retailed unsewn fabrics and garments to residents of the capital and sojourning traders not involved in the silk trade. The vestiopratai faced intense competition from imported silks distributed by the prandiopratai, which were close substitutes in terms of quality, pattern, color, and fiber-mix. These silks very likely were competitively priced, as the prandiopratai acted collectively in the purchase of the imported silks.[216] This practice, reinforced by the availability of locally produced silks, facilitated monopsonistic buying tactics and possibly resulted in lower import prices, thereby strengthening the competitive position of the prandiopratai vis-à-vis the vestiopratai, since both catered to the same clientele.[217] On the other hand, unrestricted imports of silks not only enhanced consumer choice but also forced the serikarioi to

[214]Relatively easy entry almost always accompanies markets populated by a large number of sellers.

[215]In Figure 4, the short-run demand curve SRDD′ of the monopolistic competitor lies at a level determined by the prices of all competing products, which are in turn determined by the total group demand and supply relation. The seller will independently try to maximize profits by choosing that price (OP) and output (OQ) at which marginal cost (SRMC) equals marginal revenue (SRMR), as drawn from the demand curve. If the demand curve slopes noticeably, in the short run, where the number of sellers in the group is fixed, the individual seller could reap an excess profit as measured by the rectangle Pabc. But in the long run, a confluence of factors, such as simultaneous group price-output adjustments to expand sales, new entry (as long as net revenue is positive), shifts in buying habits, and the appearance of more close substitutes would make the individual seller's demand curve LRDD′ more elastic and shift it downward to the point that it becomes tangential to the average cost curve (LRAC). As a result, the seller realizes sales OQ at a price OP and earns only normal profits because the price is lowered, as shown in Figure 5. In reality, however, some sellers will ordinarily enjoy more advantageous demand to cost relations than others, and potential entrants may be at some disadvantage relative to established firms. At any moment, therefore, some sellers will probably be earning normal profits and others earning excess profits. On the theory of monopolistic competition see E. H. Chamberlin, *Theory of Monopolistic Competition* (Cambridge, 1958), 71–100; Bain, *Pricing,* 65–70 and 350–67; Ryan, *Price Theory,* 297–304; Ferguson, *Microeconomic Theory,* 285–301.

[216]See above, p. 298.

[217]The forcefulness of the monopsonistic power of the prandiopratai, however, may have been mitigated at times by the countervailing bargaining power external suppliers of silks may have been able to wield and concern about the repercussions of an aggressive pricing policy on the flow of imports. The dynamics that shaped the behavior of the metaxopratai and the external suppliers in the raw silk trade may apply equally in this case, *mutatis mutandis.*

produce high-quality silks at competitive prices, and the ripple effect prompted productivity improvements and cost cuts further upstream. This cascaded effect is reflective of the intensity of the competitive forces that permeated the silk industry.

The organizational structure, institutional setting, and the attendant behavioral pattern suggest that the retail market in silks most likely operated under conditions of monopolistic competition, with results approximating those of atomistic competition. The large number of establishments of varying size,[218] unimpeded entry, import competition, and inability to devise and maintain overt or covert collusive arrangements point to an absence of appreciable seller concentration and consequent monopoly power to influence prices significantly. Even so, where product differentiation was strong and buyers exhibited a marked status consciousness, sellers could influence prices and reap excess profits. In general, the retail market probably functioned much like the wholesale, and the discussion of it is applicable here as well, *mutatis mutandis*.

THE DEMAND FOR SILKS: AN OVERVIEW

In the absence of statistical evidence, any assessment of the demand for silks must be aggregative, impressionistic, and tentative. Basically, the private silk industry was outward-looking, albeit not aggressively so, and had a firm foothold in the domestic market. Strong external demand for these much coveted luxuries is attested by the active trade with the Italian cities, Islamic states, the Russians and the Bulgarians; export restrictions on particular types of silks; treaty restrictions on exportable quantities of silks; and strict measures to curb smuggling to foreign countries.[219] In fact, claims have been made that production could not satisfy growing external demand.[220] Similarly, the fact

[218]The *Book of the Eparch* does not mention the title of the chief of the guild of vestiopratai. In another source, however, he is referred to as an exarch (ἔξαρχος): Christophilopoulos, "Ζητήματα τινὰ ἐκ τοῦ Ἐπαρχικοῦ Βιβλίου," *Hellenika* 11 (1939): 133–34. The appointment of high-ranking exarchs in the guilds of metaxopratai (see note 160), vestiopratai, and prandiopratai (V.1), and probably also in the guilds of katartarioi and serikarioi, where the law is silent, primarily signifies their large membership and the higher (middle class) social status of their members as economically better off compared to members of the other guilds, rather than the perceived importance or reputation of their profession, as Nicole, *Livre du Préfet,* 88, and Christophilopoulos, Ἐπαρχικὸν βιβλίον, 47–48, 49 n. 1, assert. Since there is no practical way to establish unequivocally each guild's contribution to the public weal, there is no logical basis for asserting that because, say, the bakers' chief was a lower-ranking official (προστάτης), bakers' socioeconomic contribution was less important than that of the raw silk traders simply because their guild was headed by a higher-ranking official (ἔξαρχος). Reputation and esteem are not quantifiable, in any case, and hence are not useful in establishing discriminate professional traits or making meaningful distinctions among occupational guilds.

[219]Lopez, "Silk Industry," 3, 8, 22–23, 28–30, 32, 37–38; Goitein, *A Mediterranean Society,* 103; Harvey, *Economic Expansion,* 183.

[220]Angold, "Medieval Byzantine 'City,'" 29; Runciman, "Byzantine Trade," 141; Bréhier, *Civilisation byzantine,* 188. Angold (ibid., 29–30) maintains that the guilds were unable to meet the growing demand for silks because of regulatory constraints. As a result, "[i]t had in the end to be met by those working outside the gild framework, whether in the capital or in the provinces. This failure of the gilds boosted the 'unofficial' economy." Angold's assertion probably holds for developments during the eleventh century, when provincial towns entered the silk trade in earnest. As far as the capital is concerned, the guild system aimed precisely to prevent the parallel development of silk manufacturing activities outside the guild framework, and there is no evidence that it failed to do so during the tenth century (see pp. 269 and 273–74). Moreover, the *Book of the Eparch* did not in any way impose quantitative restrictions on the productive capacity of individual firms or interfere with their business decisions, and part of the domestic demand was met by unrestricted imports (see pp. 287–88, 294, 297–98, 311–12, 322). It follows that the guilds would have had no difficulty

that the local citizenry had access to a wide range of silks and that certain types were reserved exclusively for them (IV.4, 8; VIII.3), the constant need of the imperial court for silks to compensate government officials, the unrestricted import of silk fabrics, and their extensive use for ecclesiastic purposes and as a store of value,[221] betoken an equally robust local demand. Finally, the emergence of important silk-manufacturing centers in the western provinces of the empire by the mid-eleventh century[222] is further evidence of an expanding demand for silks during the preceding century since their establishment and gradual development must be dated long before.

To be sure, the low-income strata that comprised the bulk of the population did not enter the market, as the prices of silks were prohibitive for them. The primary consumers of silks remained the wealthy, state officials, the Church, the upper-middle class, and their counterparts abroad. Conspicuous display of status was a potent force behind the demand for high-priced silks. Moreover, the demand for luxuries, on which well-to-do and status-conscious consumers spent an increasing proportion of their income as they got richer, did not remain static over time.[223] Although not immune from the vicissitudes and random shocks that afflicted the economy as a whole, the secular trend in the demand for silks was probably rising during the tenth century.[224] It was fostered by a slowly expanding economy and the growing "feudalization" of the economic and social structure, by the increasing wealth and income of the nobility and the dominant classes (which was reinforced by skewed income distribution and incidence of taxation),[225] the fact that

in expanding their capacity and production as the market dictated and thereby meet any growth in demand (see below, p. 328). Therefore, the alleged failure of the guilds to meet this challenge and the consequent development of an unofficial silk manufacturing sector hardly seem plausible.

[221] Harvey, *Economic Expansion,* 184.

[222] K. M. Setton, "Athens in the Later Twelfth Century," *Speculum* 19 (1944): 195–96; Jacoby, "Silk in Western Byzantium," 460–62, 464–70, 490, 499.

[223] Generally, the demand for luxuries has a relatively high income elasticity, i.e., given percentage increases (decreases) in income are accompanied by relatively larger percentage increases (decreases) in the amount spent on such articles.

[224] In technical terms, over time the demand curve was shifting to the right, implying that at any given price a larger quantity was demanded or, for a given quantity, consumers were prepared to pay a higher price. The price level would also depend on the elasticity of supply: the less elastic the supply the higher the price, and vice versa. Apparently, the cultivation of mulberry trees remained profitable enough to encourage the expansion of sericulture in the empire, while shortfalls were met through imports. See Guillou, "Production and Profits," 92–95.

[225] On the territorial expansion of the empire during the Macedonian dynasty (867–1059), the concentration of land ownership in the hands of the powerful (δυνατοί) and the limited success of successive emperors to curb this trend, and the excessive tax burden of the small landholders, which led to their economic ruin and the *patrocinium* movement, see Ostrogorsky, *History of the Byzantine State,* 272–76, 280–82, 286–88, 306–7, 371–72; idem, "Agrarian Conditions in the Byzantine Empire in the Middle Ages," in *Cambridge Economic History of Europe* (Cambridge, 1966), 1:215–22; S. Runciman, *Byzantine Civilization* (London, 1933), 194; P. Charanis, "On the Social Structure of the Later Roman Empire," *Byzantion* 17 (1946): 51–55 and references cited therein. On the impact of population growth on the expansion of the area under cultivation and the increase in agricultural production; the opportunity afforded by the economic recovery for landowners to build up large estates, make yield-raising productive investments, and strengthen their economic position; and the effect of rising agricultural production on the growth of towns and markets, see Harvey, *Economic Expansion,* 47–48, 56–58, 78–79, 121, 159–62, 213–15, 218, 225–27; idem, "The Middle Byzantine Economy: Growth or Stagnation?" *BMGS* 19 (1995): 243–61, and references cited therein; Angold, *The Byzantine Empire,* 84–88 and 280. J. L. Teall also maintains that agricultural production intensified during the 9th and 10th centuries and the first half of the 11th century: "The Byzantine Agricultural Tradition," *DOP* 25 (1971):

silks remained always in fashion, and the prestige and social distinction silks conferred upon status-conscious buyers.[226]

Given strong consumer preference, the quantity of silks bought over the relevant price ranges for local consumption and exports must have been substantial, and so must have been the silk industry's corresponding share in total industrial output. And since productive effort among the various commodities in open economies is apportioned according to what buyers are prepared to spend on them, the silk industry was apparently able to muster the requisite financial (own capital, retained earnings, borrowings) and human resources (technical skills, organizational capacity) to expand as demand and profit opportunities unfolded. Correlatively, the market demand for good quality but moderately priced silks on the part of the upper classes tended to be price elastic, as the expenditure amounted to a considerable proportion of their income (although not their wealth)—at least for the majority of them.[227] This meant that, for the bulk of the tradable silks produced by the private sector, referred to as "second-quality precious textiles" to differentiate them from the prohibited ones,[228] a given decrease in price would result in a more than proportionate increase in output and sales.[229]

Concluding Remarks

Rather than summarize the entire range of issues raised in this article, I conclude by highlighting its most important points. Where the findings of this study dissent from the literature, they do so because of differences in the framework in which the analysis is

53–59. Cf. also A. Andréadès, "The Economic Life of the Byzantine Empire," in *Byzantium: An Introduction to East Roman Civilization,* ed. N. H. Baynes and H. S. B. Moss (Oxford, 1961), 57–60; W. Treadgold, *A History of the Byzantine State* (Stanford, 1997), 569–79, 699–706; R. S. Lopez, "The Role of Trade in the Economic Readjustment of Byzantium in the Seventh Century," *DOP* 13 (1959): 69.

[226] Part of the demand for silks of exceptional workmanship and artistic distinction, perceived by buyers as somehow "unique," is really for display, high-price distinction, or aesthetic value—for conspicuous consumption. The utility of possessing such an article derives not only from its inherent qualities, which reflect the actual price effect, but also from the price the consumer believes other people will think he paid for it, which reflects the conspicuous price effect. The demand curve for buyers whose conspicuous price effect is very strong and exceeds the actual price effect will be positively inclined (upward sloping), implying that consumers will buy more at higher prices because of the increased utility derived from the article and less at low prices, as the reduced utility due to the substantial reduction of the conspicuous effect at low prices induces a number of buyers to leave the market. See H. Leibenstein, *Beyond Economic Man* (Cambridge, 1980), 51–52, 62–65, 67. However, for the consumers of most of the high-quality silks with "non-unique" characteristics, the demand curve sloped downward in the conventional manner, implying that less was purchased at high prices and more at low prices.

[227] Any judgment on the price elasticity of demand for an article must take into account three determinants: number and closeness of substitutes, importance in the buyer's budget (i.e., the fraction of total expenditures it represents), and alternative uses. The more narrowly an article is defined, the more close substitutes it has and the more elastic the demand for it will tend to be. Also, the more important the good is in the buyer's budget and the more uses an article has, the more elastic its demand. These factors can reinforce each other or work in opposite directions. For a complete discussion, see A. Marshall, *Principles of Economics* (London, 1920), 86–95.

[228] Lopez, "Silk Industry," 8–9.

[229] Lopez asserts that the demand for precious silks was small and could not be increased beyond a certain point and that, if exports were not restricted, prices probably would have fallen without a proportionate increase in sales: "Silk Industry," 19 and 42. Both assertions, implying a thin market and an inelastic demand for widely tradable silks, are at variance with the analysis presented here.

cast. Primary emphasis has been placed on the impact on the economic agents' conduct and performance of basic economic and institutional parameters (e.g., import and domestic trade environment, industry organization, market structure, regulatory regime), operational dimensions (e.g., mode of production, output characteristics), and market dynamics. "Fallacy of division" arguments, strained hypotheses, conclusions based on insufficient evidence, unwarranted analogies rooted in the experience of the West, and abstraction from market dynamics has led to misunderstandings concerning the functioning of the guild superstructure and the behavior of guild members. These received notions of the guild system's purpose and the effect of market fragmentation invited reconsideration, reevaluation, or confutation. Misreadings of, or unjustified readings into, certain provisions of the *Book of the Eparch* that led to erroneous conclusions have been elucidated. Allegations that the law could be scoffed at with impunity were challenged and found to lack foundation. Finally, following the development of a market typology, the likely nature of competition, its underlying forces, and their potential impact on the silk industry's dynamics were delineated.

The hypothesis that those metaxarioi who were denied direct access to imported raw silk because they were not included in the eparch's list as being poor and hence not members of the guild of metaxopratai is specious. The term εὐτελής in provision VII.2 of the *Book of the Eparch* refers to inferior social standing—servile status—not to a lack of financial means. The ineligibility of the metaxarioi and katartarioi to participate in the collective purchase in this particular instance and their consequent entitlement to purchases from metaxopratai at capped profit margins was not motivated by their poverty, as has been alleged, but because both groups shared the same predicament: as slaves they occupied an inferior social position, although the reasons for their exclusion from this specific transaction remain elusive.

The principle of the functional division of labor among guilds in the private silk industry, whereby no two guilds could compete in the purchase or sale of the same goods, was upheld—claims to the contrary notwithstanding. The view that the division of labor was unenforced and that more powerful guilds encroached upon weaker guilds' activities in defiance of the law is unwarranted; this view slights the willingness and capability of the authorities to enforce the law and glosses over the ability of the offended guilds to ward off intrusions in the face of high stakes. Significantly, the persons hired by the metaxopratai in the course of their alleged invasive activities into yarn production were not poor and vulnerable workers as we have been led to believe. These workers possessed special skills and were employed to manage à façon contracts with katartarioi acting as principals, a sideline activity that enabled the metaxopratai to procure yarn beyond direct purchases lawfully without being involved in yarn production. In the same vein, the hypothesis that members of a guild were allowed to perform tasks that other guilds made a business of so long as this did not lead to market competition is indefensible.

The regulatory apparatus aimed fundamentally to thwart parallel development of commercial silk manufacturing outside the guild system by channeling all related economic activities through a controllable setting, to enforce the mandated division of labor among guilds, and to forestall enterprise growth through obtrusive vertical or horizontal integration. The goal was to prevent the emergence of monopolistic market structures, concentration of economic power, and potential threats to the regime. It would make no

sense to set up a compulsory guild structure, designate operational functions, and enact elaborate rules, only to allow the same activities to be conducted outside the system. Permitting this would have defeated the purpose of the guild system and the state's industrial policy. By the same token, implementation of policy objectives and enforcement of regulatory provisions dictated mandatory guild membership for proprietors of commercial and industrial establishments, although not for craftsmen employed as laborers, a notion that runs counter to widely held opinion.

The growth of firms in response to expanding demand was not hampered by legal restrictions, as has been alleged. The objective of the guild structure and official policy was that growth in demand be shared by as many firms as possible, be met through expansion of existing firms and/or new entry, and be channeled through the cascaded markets. The restrictions imposed aimed solely to prevent the creation of large multistage firms through extension of their activities laterally or into preceding and/or succeeding phases of production, a move that was viewed as unrelated to market growth and that could have had inimical effects on competition. Such inroads would have negated a major objective of the regulatory regime, namely the preservation of competition and prevention of monopolies—surely a sound policy in light of the likely social costs and the dubious impact of integration on economic efficiency at this stage of the industry's development.

The guild system did not aim to fix prices through concerted action among guild members or thwart the free play of market forces to protect individual market shares. Contrary to expressed views, legally mandated group sales monopolies or buying monopsonies did not confer, *ipso facto,* exercisable monopolistic or monopsonistic pricing power on individual guild members, as members did not act on command, in unison, or in compliance with internal disciplinary regulations. More important, relatively unconcentrated market structures, unimpeded legal entry, moderate or low economic barriers to new competition, lack of control over the price of yarn and silks, opposition from wronged guilds reacting in self-preservation, and anti-monopoly legislation were potent countervailing forces, sustaining competitive rivalry among guild members and deterring collusive behavior. The prevailing market conditions, institutional arrangements (e.g., organized markets, body of laws, guild setup), and economic calculus all fostered antagonistic rather than cooperative attitudes in inter-seller and inter-buyer relations. Moreover, unlike the pattern typical in the medieval West, where the guilds often arrogated to themselves powers once wielded by the local government, the silk guilds in the capital had no control over the imperial authorities. In consequence, they could not with impunity exercise monopoly power in manufacturing and trade, counting on the acquiescence of authorities—even when market conditions were conducive.

Nor did the guild system purport to shield the industry from external competition, as has been maintained. An expanding silk industry, well beyond the "infant" stage, was under no pressure to maintain its position, and unrestricted imports attest to the absence of protectionist tendencies. The silk industry was far more open to internal and external competition than is usually thought, as the authorities were aware that its survivability and growth depended on a policy that refrained from controlling prices, skill supply, conditions of employment, or wage rates. Instead, the government relied on the dynamic interaction of market forces and the market mechanism. Fundamentally, competition,

unimpeded entry and exit, free trade, and equality of opportunity rather than equality of economic results were the foundation of the state's industrial policy.

Market structure at each stage of the silk industry's operations determined the nature of competition, influenced the behavior of participants, and shaped pricing decisions and performance outcomes. Yet, swayed by the vicissitudes of the economy and market dynamics, both structures and business conduct could vary over time, reflecting different productivity trends, growth rates in established firms, and the pace of new entry and exit. Such changes inevitably led to modifications of production and pricing patterns and, by extension, to changes in performance outcomes. Nevertheless, in the absence of economies of large-scale production, dominant advantage of product differentiation, and fortuitous absolute cost advantages, it is unlikely that market structures in silk manufacturing and distribution ever reached levels of high seller or buyer concentration in the capital.

Among several logically possible outcomes in terms of market structure, conduct, and performance, certain ones appear more likely to have prevailed longer and with greater frequency. The provincial cocoon markets, characterized by a relatively high concentration of buyers supplied competitively by many small producers, very likely experienced price structures hovering below atomistically competitive levels and persistent excess monopsony profits. Contrary to long-standing belief, the monopsonistic pricing power of the collectively acting cocoon/raw silk and silks importers, although not absent, could be materially weakened since the price concessions extracted could vary significantly each market day, depending on the prevailing market conditions and ad hoc circumstances that could enhance the bargaining strength of the external suppliers. In the domestic cocoon/raw silk and two-tier yarn markets, relatively low market concentration, product homogeneity, low entry barriers, prevailing institutional parameters and economic calculus, and inauspicious prospects for collusive behavior all point to the prevalence of forces conducive to outcomes not substantially different from those produced by atomistically competitive conditions, largely resulting in normal or limited excess profits. Finally, the wholesale and retail markets for silks most likely operated under conditions of monopolistic competition. In this structure, prices of distant-substitute silks could remain above atomistically competitive levels and excess profits could persist, while prices of close-substitute silks would tend in the longer run to gravitate toward competitive levels. In reality, however, as some sellers would have enjoyed a more advantageous price-cost relation and potential entrants might have been at some disadvantage relative to established firms, at any moment some sellers probably earned normal profits and others excess profits.

The guild structure as applied to the silk industry provided a system of checks and balances within the parameters of the prevalent political, economic, and cultural milieu, and ensured a mutually accommodating modus vivendi among all parties concerned—the state, the business community, and the upper class. The state felt that it had the inalienable and uncontested right to intervene selectively and to control certain aspects of economic activity in the common interest. To be sure, the restrictions, inspections, and reporting requirements imposed must have been unwelcome and annoying to guild members—as they are still today. Yet, intrusive and cumbersome as these rules and regulations may have been, they did not result in micromanagement of the industry. Once

the permissible economic activities and tradable silks were specified, the regulatory regime did not interfere with the strictly technico-economic dimensions of the firms' operations, thus affording entrepreneurs ample room for independent action. As a result, state intervention did not perceptibly affect economic incentives, discourage private initiative, or impede the growth of firms. Once in place, the regulatory framework provided a set of non-shifting parameters that clearly defined the rules of the game and allowed guild members and sojourning merchants to conduct their affairs with certitude, as is attested by the continued expansion of the silk industry and trade.[230]

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[230] Failure to put the functioning of the regulatory regime in proper perspective and to factor in the impact of market dynamics has led to sweeping pronouncements: "ce paradis du monopole et du privilège qui s'appelle Constantinople" (J. Nicole, "Édit de l'empereur Léon VI Le Sage sur les corps de métiers de Constantinople," *Revue générale du droit* 17 [1893], repr. in idem, Ἐπαρχικὸν Βιβλίον, 293); "Free trade and free production were unknown in the Byzantine Empire" (A. A. Vasiliev, *History of the Byzantine Empire* [Madison, Wisc., 1958], 1:344); "There was no economic freedom in Byzantium, everything was regulated. Here the true socialist city was in being before Karl Marx and Lenin" (R. Guerdan, *Byzantium, Its Triumphs and Tragedy* [New York, 1957], 88).